I

103D CONGRESS
1ST SESSION

H. R. 881

To prohibit smoking in Federal buildings.

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 16, 1993

Mr. TRAFICANT introduced the following bill; which was referred to the Committee on Public Works and Transportation

---

A BILL

To prohibit smoking in Federal buildings.

2023468276

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

2023468277

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

103D CONGRESS
1ST SESSION

H. R. 881

To prohibit smoking in Federal buildings.

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 16, 1993

Mr. TRAFICANT introduced the following bill; which was referred to the Committee on Public Works and Transportation

---

A BILL

To prohibit smoking in Federal buildings.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Ban on Smoking in Federal Buildings Act".

SEC. 2. FINDINGS.

Congress finds that—

(1) environmental tobacco smoke is a cause of lung cancer in healthy nonsmokers and is responsible for acute and chronic respiratory problems and other health impacts among sensitive populations;

20234682?8

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

(2) environmental tobacco smoke comes from secondhand smoke exhaled by smokers and sidestream smoke emitted from the burning of cigarettes, cigars, and pipes;

(3) citizens of the United States spend up to 90 percent of a day indoors and, consequently, there is a significant potential for exposure to environmental tobacco smoke from indoor air;

(4) exposure to environmental tobacco smoke occurs in public buildings and other indoor facilities; and

(5) the health risks posed by environmental tobacco smoke exceed the risks posed by many environmental pollutants regulated by the Environmental Protection Agency.

SEC. 3. SMOKING PROHIBITION IN FEDERAL BUILDINGS.

(a) IN GENERAL.—On and after the 180th day after the date of the enactment of this Act, smoking shall be prohibited in any indoor portion of a Federal building and in any other space owned or leased for use by a Federal agency.

(b) EXECUTIVE BRANCH BUILDINGS.—The Administrator of General Services shall issue regulations, and take such other actions as may be necessary, to institute and enforce the prohibition contained in subsection (a) as such

2023468279

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

prohibition applies to Federal buildings and other space owned or leased for use by an Executive agency.

(c) JUDICIAL BRANCH BUILDINGS.—The Director of the Administrative Office of the United States Courts shall take such actions as may be necessary to institute and enforce the prohibition contained in subsection (a) as such prohibition applies to Federal buildings and other space owned or leased for use by an establishment in the judicial branch of the Government.

(d) LEGISLATIVE BRANCH BUILDINGS.—

(1) HOUSE OF REPRESENTATIVES.—The House Office Building Commission shall take such actions as may be necessary to institute and enforce the prohibition contained in subsection (a) as such prohibition applies to Federal buildings and other space owned or leased for use by the House of Representatives.

(2) SENATE.—The Committee on Rules and Administration of the Senate shall take such actions as may be necessary to institute and enforce the prohibition contained in subsection (a) as such prohibition applies to Federal buildings and other space owned or leased for use by the Senate.

(3) OTHER ESTABLISHMENTS.—The Architect of the Capitol shall take such actions as may be nec-

20234688280

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

essary to institute and enforce the prohibition contained in subsection (a) as such prohibition applies to Federal buildings and other space owned or leased for use by an establishment in the legislative branch of the Government (other than the House of Representatives and the Senate).

SEC. 4. REPORT BY ADMINISTRATOR OF GENERAL SERVICES.

Not later than 2 years after the date of the enactment of this Act, the Administrator of General Services shall transmit to the Committee on Public Works and Transportation of the House of Representatives and the Committee on Environment and Public Works of the Senate a report that includes—

(1) information concerning the degree of compliance with this Act; and

(2) an assessment of the legal status of smoking in public places.

SEC. 5. PREEMPTION.

Nothing in this Act is intended to preempt any provision of law of a State or political subdivision of a State that is more restrictive than a provision of this Act.

SEC. 6. DEFINITIONS.

For the purposes of this Act, the following definitions apply:

2023468281

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

(1) EXECUTIVE AGENCY.—The term "Executive agency" has the same meaning such term has under section 105 of title 5, United States Code.

(2) FEDERAL AGENCY.—The term "Federal agency" means any Executive agency or any establishments in the legislative or judicial branches of the Government.

(3) FEDERAL BUILDING.—The term "Federal building" means any building or other structure owned or leased for use by a Federal agency, except that the term shall not include any area of a building that is used primarily as living quarters.

O

20230468282

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

2023468283

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

NORMAN Y. MINETA, California
Chairman

JAMES L. OBERSTAR, Minnesota
NICK JOE RAHALL II, West Virginia
DOUGLAS APPLEGATE, Ohio
RON de LUGO, Virgin Islands
ROBERT A. BORSKI, Pennsylvania
TIM VALENTINE, North Carolina
WILLIAM O. LIPINSKI, Illinois
ROBERT E. WISE, Jr., West Virginia
JAMES A. TRAFICANT, Jr., Ohio
PETER A. DeFAZIO, Oregon
JIMMY HAYES, Louisiana
BOB CLEMENT, Tennessee
JERRY F. COSTELLO, Illinois
MIKE PARKER, Mississippi
GREG LAUGHLIN, Texas
PETE GEREN, Texas
GEORGE E. SANGMEISTER, Illinois
GLENN POSHARD, Illinois
DICK SWETT, New Hampshire
BUD CRAMER, Alabama
BARBARA-ROSE COLLINS, Michigan
ELEANOR HOLMES NORTON,
District of Columbia
LUCIEN E. BLACKWELL, Pennsylvania

JERROLD NADLER, New York
SAM COPPERSMITH, Arizona
LESLIE L. BYRNE, Virginia
MARIA CANTWELL, Washington
PAT (PATSY ANN) DANNER, Missouri
KAREN SHEPHERD, Utah
ROBERT MENENDEZ, New Jersey
JAMES E. CLYBURN, South Carolina
CORRINE BROWN, Florida
NATHAN DEAL, Georgia
JAMES A. BARCIA, Michigan
DAN HAMBURG, California
BOB FILNER, California
WALTER R. TUCKER, California
EDDIE BERNICE JOHNSON, Texas

PAUL SCHOBLHAMER, *Chief of Staff*
SANTO ESPOSITO, *Chief Counsel*

U.S. House of Representatives

COMMITTEE ON PUBLIC WORKS
AND TRANSPORTATION

SUITE 2165 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-4472

BUD SHUSTER, Pennsylvania
Ranking Republican Member

WILLIAM F. CLINGER, Jr., Pennsylvania
THOMAS E. PETRI, Wisconsin
SHERWOOD BOEHLERT, New York
JAMES M. INHOFE, Oklahoma
BILL EMERSON, Missouri
JOHN J. DUNCAN, Jr., Tennessee
SUSAN MOLINARI, New York
WILLIAM H. ZELIFF, Jr., New Hampshire
TOM EWING, Illinois
WAYNE T. GILCHREST, Maryland
JENNIFER DUNN, Washington
TIM HUTCHINSON, Arkansas
BILL BAKER, California
MAC COLLINS, Georgia
JAY C. KIM, California
DAVID A. LEVY, New York
STEVE HORN, California
BOB FRANKS, New Jersey
PETER I. BLUTE, Massachusetts
HOWARD P. "BUCK" McKEON, California
JOHN L. MICA, Florida
PETER HOEKSTRA, Michigan
JACK QUINN, New York

JACK SCHENENDORF, *Minority Staff Director*

AGENDA

SUBCOMMITTEE ON PUBLIC BUILDINGS AND GROUNDS

2253 RAYBURN HOUSE OFFICE BUILDING

THURSDAY, APRIL 22, 1993

9:00 A.M.

The Subcommittee will receive testimony on H.R. 881, a bill to prohibit smoking in Federal buildings.

WITNESSES

Panel:

Dr. John W. Hoyt
Chairman
Department of Critical Care Medicine
St. Frances Medical Center and Society of Critical Care Medicine
Pittsburgh, Pennsylvania

Dr. Alfred Munzer
President
American Lung Association
Washington, D.C.

• • •

(Continued on back)

2023468284

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

Panel:

Mr. Gray Robertson
President
Healthy Buildings International
Fairfax, Virginia

Dr. Gio Batta Gori
Director
Health Policy Center
Bethesda, Maryland

* * *

Panel:

Mr. David C. Zeigler
Acting Assistant Secretary
Occupational Safety and Health Administration
(OSHA)
Department of Labor

Mr. Lawrence Rogers
Director
Office of Workers' Compensation Programs
Department of Labor

accompanied by:

Mr. Joseph M. Woodward
Associate Solicitor
OSHA

* * *

Dr. Douglas W. Dockery
Associate Professor
Department of Environmental Epidemiology
Harvard School of Public Health
Boston, Massachusetts

2023468285

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

2023468286

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

ELEANOR HOLMES NORTON
DISTRICT OF COLUMBIA

COMMITTEE ON
PUBLIC WORKS AND TRANSPORTATION

SUBCOMMITTEES
VICE CHAIR, PUBLIC BUILDINGS AND GROUNDS
WATER RESOURCES AND ENVIRONMENT

COMMITTEE ON
POST OFFICE AND CIVIL SERVICE

SUBCOMMITTEE
CHAIR, COMPENSATION AND EMPLOYEE BENEFITS

Congress of the United States
House of Representatives
Washington, D.C. 20515

COMMITTEE ON
THE DISTRICT OF COLUMBIA

SUBCOMMITTEES
CHAIR, JUDICIARY AND EDUCATION
FISCAL AFFAIRS AND HEALTH

JOINT COMMITTEE ON THE ORGANIZATION
OF CONGRESS

DEMOCRATIC STUDY GROUP
EXECUTIVE COMMITTEE

STATEMENT OF CONGRESSWOMAN ELEANOR HOLMES NORTON BEFORE THE SUBCOMMITTEE ON PUBLIC BUILDINGS AND GROUNDS HEARING ON H.R. 881, A BILL TO BAN SMOKING IN FEDERALLY LEASED AND OWNED BUILDINGS

April 22, 1993

Chairman Traficant, I am pleased to join you and my distinguished colleagues at this hearing to consider H.R. 881, a bill to prohibit smoking in federally owned and leased buildings. I applaud you, Mr. Chairman, for your continuing interest in protecting federal workers from the negative effects of secondhand smoke, and welcome the witnesses who will appear before us this morning.

In spite of the fact that tobacco smoking has long been recognized as a leading cause of disease and death, 25.7 percent of Americans -- 46.3 million people -- smoked in 1991. Many of these people do not stop their smoking at the workplace, and, consequently, their co-workers have been, and continue to be, exposed to secondhand smoke. In recent years, medical and environmental studies have revealed that non-smokers, who are exposed to smoke exhaled by smokers, may be at risk for developing certain negative health effects associated with smoking.

In recognition of the dangers of passive smoking, there has been widespread implementation of policies to protect non-smokers. For instance, no longer can a person smoke on an airplane during a domestic flight and in some cities, such as New York, there is a total ban on smoking in municipal government buildings. By prohibiting all smoking in federally owned and leased buildings, H.R. 881 continues this sound practice of establishing smoking policies that reflect health and scientific findings on the risks of secondhand smoke.

H.R. 881 deserves our support. It is a cost-efficient measure that will provide federal employees with a healthy, smoke-free work environment as they provide the American people with faithful service. Again, my thanks to Chairman Traficant and to our witnesses here today.

2023468287

815 15TH STREET, N.W., SUITE 100
WASHINGTON, D.C. 20005-2201
(202) 783-5065
(202) 783-5211 (FAX)

1415 LONGWORTH HOUSE OFFICE BUILDING
WASHINGTON, D.C. 20515-5101
(202) 225-8050
(202) 225-3002 (FAX)
(202) 225-7829 (TDD)

1151 CHICAGO STREET, S.E.
WASHINGTON, D.C. 20020-5734
(202) 678-8900
(202) 678-8844 (FAX)

Recycled Paper

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

2023468288

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

Society of Critical Care Medicine

TESTIMONY OF JOHN H. HOYT, MD, FCCM ON BEHALF OF THE SOCIETY OF CRITICAL CARE MEDICINE
BEFORE THE HOUSE PUBLIC WORKS AND TRANSPORTATION COMMITTEE
SUBCOMMITTEE ON PUBLIC BUILDINGS AND GROUNDS
TESTIMONY IN SUPPORT OF H.R. 881,
BANNING SMOKING IN FEDERAL AND CONGRESSIONAL BUILDINGS

April 22, 1993

Mr. Chairman and Members of the Subcommittee, I am John Hoyt, MD, FCCM, Chairman of the Critical Care Medicine Department and Medical Director of the Medical/Surgical Intensive Care Unit (ICU) at St. Francis General Hospital in Pittsburgh, Pennsylvania. St. Francis General Hospital is a 750-bed, full-service facility that has provided care to patients in Pittsburgh for 125 years. I am also a clinical professor of anesthesiology and critical care at the University of Pittsburgh, part of the largest fellowship training program of critical care physicians in the world.

I am a board-certified critical care medicine physician. My medical practice focuses on the care of individuals who suffer from immediate life-threatening illness and injury. My patients develop lung, brain and heart failure that is usually a result of trauma, extensive surgery, overwhelming infection, heart attack, stroke and poisoning that occurs from tobacco smoke.

My testimony today is presented as Treasurer of the Society of Critical Care Medicine, an organization comprised of more than 7,500 physicians, nurses and allied health care practitioners who are committed to the care of the approximately 4 to 6 million Americans who become critically ill or injured each year. Members of the Society are, unfortunately, all too well aware of the significant health care consequences of prolonged smoking or exposure to second-hand smoke that cost this country significant health care resources each year. Smoking kills nearly 400,000 Americans annually, including 115,000 from coronary artery disease; in general, smokers double their risk of heart disease compared to non-smokers; while those smokers between the ages of 45 and 64 years of age are three times more likely than non-smokers to suffer from heart disease. Another 27,000 Americans die from stroke, 136,000 from cancer and 50,000 from other related illnesses. A survey published by the Society of Critical Care Medicine reported that on any given day, 14.6 percent of all ICU admissions are diagnosed with respiratory insufficiency or failure. Every year, $22 billion are spent on the medical costs related to illnesses caused by the addiction to tobacco. Medicare and Medicaid spend $4.2 billion annually for the care of patients with tobacco-related illnesses.

8101 East Kaiser Boulevard
Anaheim, California 92808-2214
714-282-6000 Fax 714-282-6050

2023468289

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

Recently, I experienced one of the busiest nights in the ICU I can recall in my 17-year career as a critical care intensivist. Of the eight patients I admitted to the ICU that night, six were admitted with smoking-related illnesses and needed the support of a ventilator to breathe. Their disease, Chronic Obstructive Pulmonary Disease (COPD), literally obstructs the workings of the lung. The lung consists of a delicate architecture of tubes and sacs, that allow gas exchange and oxygen delivery. Smoking leads to damage of these tubes and sacs and obstructs the flow of oxygen to the lung. COPD causes inadequate function of the lung, shortness of breath, limited exercise ability, the need for support from mechanical ventilation and finally death from respiratory failure. The process is long and debilitating; many COPD patients suffer for as long as five years before dying of this disease. Their care is expensive; the cost for a patient to receive support from a ventilator is eight times more than average hospital care. According to the Centers for Disease Control, sixty thousand Americans die each year of Chronic Obstructive Pulmonary Disease.

How do tobacco-related costs add up in the ICU? My colleague, Dr. Timothy Buchman, Co-Director of the Surgical ICU at Johns Hopkins Hospital in Baltimore, recently published a study in the journal *Chest*, of admissions to his unit which showed that tobacco, alcohol and illegal drug-related illnesses and injuries accounted for 28 percent of the admissions and 29 percent of the medical costs during a 15-week period. The 435 patients admitted to this particular ICU generated $3,014,953 in costs in a unit with a per night cost of $3,000 per bed. The 59 patients with tobacco-related illnesses alone accounted for $481,648 in costs, or approximately $8,000 each. Tobacco-related cases that involved cancer and respiratory diseases accounted for 14 percent of the admissions and 16 percent of the costs. All but one of the 59 cases were related to cigarette smoking; one case was related to cigar smoking.

The physical and societal ills associated with smoking affect not only adults, but our children as well. A 1991 report from the Department of Health and Human Services reported that half of all eighth graders and nearly two-thirds of all tenth graders have tried cigarettes. Infants are also adversely affected; 20 to 30 percent of low birth weight babies, up to 14 percent of preterm deliveries and approximately 10 percent of all infant deaths are attributable to cigarette smoking during pregnancy.

The life-threatening effect of passive smoking has been well documented. The recent EPA report, "Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders" clearly stated the dangers of breathing second-hand smoke. When inhaled, environmental tobacco smoke is a human carcinogen that can be directly blamed for the lung cancer deaths of 3,000 non-smokers each year in the U.S. In children, second-hand smoke clearly increases the risk of lower respiratory tract infections, including bronchitis and pneumonia, resulting in the hospitalization of 7,500 to 15,000 infants and children each year. This carcinogen also increases the prevalence of middle ear disease and the frequency and

2023468290

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

severity of symptoms in asthmatic children. According to the EPA, the condition of 200,000 to 1 million asthmatic children is worsened by exposure to second-hand smoke. The Society of Critical Care Medicine agrees with former EPA Administrator William K. Reilly's statement that environmental tobacco smoke may present the most important environmental health risk facing Americans today.

In this era of historic health care reform, where quality of care, access to care and cost of care are such intensely debated issues, these results - - which are due to ***preventable*** illness - - are entirely unacceptable. The "common courtesy" approach to eliminating passive smoking that is advocated by the tobacco industry has not worked. Policymakers, health care providers and patient advocates, all must ensure that the health of Americans is not further endangered by tobacco smoke. We must ensure that scarce and expensive health care resources are allocated in the most efficient manner possible. Too many other *unpredictable and unpreventable* illnesses and injuries require our attention, including overwhelming infection, traumatic injury, multi organ system failure and others. Improving the health of all Americans, by eliminating smoking and the diseases it causes, will prolong life and release the precious human, physical and financial resources needed to care for other patients.

The Society of Critical Care Medicine supports H.R. 881, which would establish a complete ban on smoking in all federal and Congressional buildings. Serious health problems caused by smoking have been well documented over a number of years. We believe it is time for Congress to take a stand and take the lead on this important issue by banning smoking in all private offices and public areas of federal and Congressional buildings.

Mr. Chairman, members of the Subcommittee, thank you for the opportunity to present the Society's views on this very important issue. We look forward to working with Congress and Members of the Subcommittee to eliminate this life-endangering threat to the lives of all Americans, adults and children. I will be happy to answer any questions you or the Subcommittee Members may have at this time.

2023468291

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

2023468292

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

American Heart Association

AMERICAN LUNG ASSOCIATION®
The Christmas Seal People®

AMERICAN CANCER SOCIETY®

Coalition on Smoking OR Health

Steering Committee

Alan C. Davis, Chairman
American Cancer Society

Scott D. Ballin,
American Heart Association

Fran Du Melle
American Lung Association

Administrator - Federal Issues

Joy Silver Epstein

Administrator - State Issues

Peter Fisher

Counsel

Matthew L. Myers
Asbill, Junkin &Myers

Legislative Advisory Council

American Academy of Family Physicians
American Academy of Pediatrics
American Association for Respiratory Care
American College of Cardiology
American Public Health Association
American Society of Internal Medicine
Association of State and Territorial Health Officials
March of Dimes Birth Defects Foundation

TESTIMONY OF ALFRED MUNZER, M.D.

ON BEHALF OF

THE COALITION ON SMOKING OR HEALTH

to the

House Committee on Public Works and Transportation

Subcommittee on Public Buildings and Grounds

U.S. House of Representatives

RE: H.R. 881, LEGISLATION TO BAN SMOKING IN FEDERALLY OWNED AND LEASED OFFICE BUILDINGS

April 22, 1993

1150 Connecticut Avenue, NW, Suite 820, Washington, DC 20036
Telephone: (202) 452-1184 FAX: (202) 452-1417

2023468293

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

Mr. Chairman, and members of the subcommittee on Public Buildings and Grounds, I am Dr. Alfred Munzer, President-elect of the American Lung Association (ALA). I am also Director of Critical Care and Pulmonary Medicine at Washington Adventist Hospital in Takoma Park, MD, where I specialize in the treatment of diseases of the lung.

The ALA is the nation's oldest voluntary health organization and is dedicated to the prevention and control of lung disease. This organization, and its medical section, the American Thoracic Society, has long recognized the contribution of indoor and outdoor air pollution to the development and exacerbation of lung disease. The ALA has devoted the past 26 years to the implementation of programs aimed at improving air quality in our homes and in our communities.

Today I am testifying of behalf of the American Lung Association, the American Cancer Society, and the American Heart Association, united as the Coalition on Smoking OR Health. Formed in 1982, the coalition has worked to heighten public awareness about the impact of tobacco consumption upon public health. It believes strong measures should be imposed to discourage tobacco use in all segments of the population, including youth, women, and minorities.

2023468294

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

As a pulmonary physician, I all too often see first hand the devastation caused by tobacco use. I see the men and women who come to me with end-stage lung cancer or emphysema, seeking a medical miracle to cure their disease. I see the children who cough and wheeze as their asthma is made worse by exposure to smoke exhaled by smokers and that comes from the burning end of a cigarette, pipe, or cigar. Smoke of this nature is commonly called involuntary, passive, or secondhand smoke. However, more recently, it is increasingly referred to as "ETS", or environmental tobacco smoke.

I cannot express to you how critical it is for us to respond to the ETS issue. Conclusions drawn from the Environmental Protection Agency's (EPA) risk assessment on ETS reenforces the sense of urgency in this regard. If we do not take immediate action, or ignore its impact on public health, ETS can easily be the cause of approximately 3,000 lung cancer deaths in nonsmokers in the coming year. I am certain this is not the future trend our society desires to establish.

Today, I do not intend to argue whether smokers should have a right to smoke it public, nor am I here to urge the subcommittee to revoke this privilege. However, I have elected to appear before you due to ongoing concern regarding the health effects of ETS for nonsmokers and particularly children, and the need to impose stringent measures, both in

2023468295

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

government and the private sector, to adequately address this growing public health concern.

I want to begin by reflecting on the evidence which has supported and recently led to the EPA findings on ETS, and move into a examination of the methodology which supports this agency's assertion that ETS is a carcinogen. I will speak briefly to the claims raised by tobacco advocates regarding the validity of the EPA findings, and lastly, focus on public interest in and support for significant action to limit or eliminate exposure to ETS is public areas.

ETS has been the topic of discussion for more than 20 years. Its health effects were first reviewed in 1972 in the U.S. Surgeon General's report on smoking and health. That report was devoted, in part, to public exposure to air pollution caused by tobacco smoke. It concluded that "an atmosphere contaminated with tobacco smoke can contribute to the discomfort of many individuals."

In 1982, the U.S. Surgeon General <u>again</u> examined the issue of passive smoking, but this time in the context of smoking and the development of cancer. At that time there were only 3 epidemiologic studies linking passive smoking and lung cancer. Even with this limited amount of evidence, the Surgeon General concluded that the evidence in these studies

2023468296

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

is the cause for grave concern regarding the possible serious public health problem associated with passive smoke and lung cancer.

By 1986, federal interest in the health effects of ETS had grown to the extent that the U.S. Surgeon General released a report devoted entirely to the issue of passive smoking. By that time, the number of epidemiologic studies had increased to 13, 11 of which showed a positive correlation between passive smoking and lung cancer in healthy nonsmokers. Based upon these findings, the Surgeon General concluded that exposure to secondhand smoke is a cause of lung cancer in healthy nonsmokers. He also concluded that children whose parents smoked had an increased frequency of respiratory symptoms and infections, compared to children whose parents were nonsmokers.

Several private organizations -- the National Academy of Science and the International Agency for Cancer Research -- published reports which drew conclusions similar to those of the EPA. The International Agency for Cancer Research, for example, released a report on cancer which concluded that "knowledge of the nature of sidestream and mainstream smoke, of materials absorbed during passive smoking, and of the quantitative relationships between dose and effect that are commonly observed from exposure to carcinogens leads to the

2023468297

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

conclusion that passive smoking gives rise to some risk of cancer."

Shortly after the release of these studies, the EPA began to examine the health effects of passive smoking on children and adults. The agency issued an initial analysis of the risks of exposure to ETS in May, 1990. Entitled, "Health Effects of Passive Smoking: Assessment of Lung Cancer in Adults and Respiratory Disorders in Children," the risk assessment focused on the potential correlation between ETS and lung cancer in nonsmoking adults and respiratory disease and pulmonary effects in children.

On January 7, 1993, the EPA released its final report assessing current scientific evidence on the risks of exposure to ETS. Based on the total weight of evidence in the scientific literature, the EPA designated ETS as a Group A carcinogen, a rating used only for extremely hazardous substances known to cause cancer in humans. It ranked ETS in a class of carcinogens which includes asbestos, benzene, and radon.

After evaluating 30 epidemiological studies on lung cancer in nonsmoking adults, the EPA determined that ETS is responsible for approximately 3,000 lung cancer deaths each year. The agency also added that ETS accounts for the development of 20

2023468298

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

percent of all lung cancers caused by factors other than smoking. For the average adult, ETS increases their risk of cancer to approximately 2 per 1,000. From these conclusions, it is clear that ETS is far more hazardous to the health of nonsmoking adults.

After evaluating more than 100 studies on respiratory health in children, the EPA concluded that ETS exposure increases their risk of lower respiratory infections, like bronchitis and pneumonia. ETS is known to cause an estimated 150,000 to 300,000 cases of respiratory illnesses in children up to 18 months each year. Of these cases, 7,500 to 15,000 result in hospitalization.

ETS exposure is also associated with additional attacks and increased severity of symptoms in children with asthma. The EPA estimates that 200,000 to 1 million asthmatic children have their condition worsened by ETS, and that ETS is a risk factor for new cases of asthma in children without a history of symptoms.

Also of concern are the risks for children whose mothers smoked during and after pregnancy. The U.S. Department of Health and Human Services has reported that, under these circumstances, children are three times more likely to die of Sudden Infant Death Syndrome (SIDS) than children of

2023468299

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

nonsmoking mothers. The risks of SIDS double for children whose mothers smoked after birth and not during pregnancy than for children reared in nonsmoking environments.

The evidence presented represents very sound science and more than adequately supports the conclusions by the EPA regarding exposure to ETS. Uniquely, each of the studies and reports used to reach this conclusion were developed and edited by different processes. In contrast to assertions made of opponents of the EPA's findings, such as those offered by the tobacco industry, it is this diverse methodology which only strengthens the validity of the conclusion of this research combined.

Without spending too much time on the tobacco industry's criticisms of the risk assessment, let me first remind the subcommittee that after 60,000 studies linking smoking with disease and death, this industry still fails to acknowledge that it produces a lethal product. This is an industry which has criticized each Surgeon General's report since 1964. Among the industry criticisms is the failure of the EPA to include studies which show no relationship between ETS and lung cancer. Among the studies cited by the industry as examples are several funded by the National Cancer Institute:

- Brownson, PhD., et.al. Passive Smoking and Lung

2023468300

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

Cancer in Nonsmoking Women. Am J Public Health 82:1525-1530, 1992.

This study was published in November 1992, too late for inclusion in the risk assessment unless it was further delayed. The industry contends that the risk assessment would change if the study were included. However, the author's of the study conclude: "Ours and other recent studies suggest a small but consistent increase risk of lung cancer from passive smoking. Comprehensive actions to limit smoking in public places and worksites are well-advised."

♦ Stockwell, Sc.D., et.al. Environmental Tobacco Smoke and Lung Cancer in Nonsmoking Women. J Natl Cancer Inst 84:1417-1422, 1992.

This study was not included in the final risk assessment and again the industry claims it is a negative study therefore left out purposefully. However, the author's conclude: "These findings suggest that long-term exposure to environmental tobacco smoke increases the risk of lung cancer in women who have never smoked."

The real issue here is statistical significance and how it is used. In defining the true meaning of statistical

2023468301

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

significance, I'd like to defer to the description used by a well-noted environmental epidemiologist, Dr. Douglas Dockery, and Associate Professor at the Harvard School of Public Health. Dr. Dockery suggests:

> " A naive critique would say that those studies which are not 'statistically significant' do not show an effect. However, statistical significance is not a measure of association or environmental tobacco smoke with lung cancer, but rather a measure of the stability of the association. It measures the statistical power of the study. In a crude sense it is a measure of study size, and studies that do not achieve statistical significance are simply too small. This does not mean that they do not provide important information on risks. It is not appropriate to discard studiés which do not achieve statistical significance, but rather they should be included giving them a weight which reflects the stability, that is the uncertainty, of their effect estimate. This is exactly what the meta-analysis of these studies provides."

Mr. Chairman, we at the Coalition on Smoking OR Health believe the EPA's findings are clear, objective, and complete in regard to ETS. The evidence used to show the relative risks associated with exposure to ETS, and its linkage to the development of lung cancer, are more compelling than similar

2023468302

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

correlations drawn for other environmental carcinogens. I hope the evidence I have presented to the subcommittee today will enable you to step beyond the criticisms offered regarding the validity of the EPA risk assessment, and encourage to you move forward in your efforts to address the real issue on the table -- adequately responding to the public health issue associated with exposure to ETS, particularly in those places where people spend a lot of time.

Let me commend the subcommittee for the effort and commitment it has made to this issue, thus far. The introduction and careful review of legislation to ban smoking in federal buildings is a very important step in this process. The Coalition on Smoking OR Health supports the bill -- H.R. 881 -- on which this hearing is being held today, and similar proposals which have been offered by other Members of Congress this year.

In examining the proposal to ban smoking in federal buildings, let me remind you that the federal government has taken little initiative to protect federal workers from exposure to secondhand smoke. Any action taken to date remains inconsistent with each federal agency responsible for its own policy. The General Services Administration (GSA) is reconsidering its regulations, but GSA space accounts for

2023468303

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

only 10 percent of federal building space.

I urge this subcommittee to take into consideration growing interest in smoke-free public places, which has gained momentum since the release of the EPA risk assessment. Based on a public opinion survey conducted by the American Lung Association, it is clear that more and more Americans believe ETS is harmful, and that they prefer smoke-free public places, as opposed to those environments in which smoke is permitted.

In this survey, the Lung Association found that 8 in 10 smokers know that ETS is bad for the people around them. We also found that nonsmokers are more likely than smokers to strongly agree about the harmful effects of ETS exposure. The survey found increasing support for total bans on smoking in public places such as restaurants, workplaces, hotels, buses, and trains. And though current smokers are more likely than others to believe that smoking in public places should be restricted, very few smokers surveyed favored no restrictions.

Clearly, as the awareness of the health hazards of ETS increases, more Americans are striving to live, work, and breathe in smoke-free environments. Very few of us make it through each day without exposure to ETS. Those who are

2023468304

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

confined to indoor environments -- like employees and staffers in the House of Representatives -- are no exception. It is unfortunate that the House Building Commission's recent decision to merely restrict smoking to certain areas does not provide the adequate protection needed.

I believe the 1986 report of the Surgeon General has the best recommendation for us to consider. In its conclusion, the report clearly states, "Simple separation of smokers and nonsmokers within the same air space may reduce, but does not eliminate, exposure of nonsmokers to ETS." Therefore, it is the responsibility of employers and employees to "ensure that the act of smoking does not expose the nonsmoker to tobacco smoke" and for smokers to "assure that their behavior does not jeopardize the health of other workers." In addition, the Surgeon General stated that nonsmokers have the "responsibility to provide a supportive environment for smokers who are attempting to stop."

Congress owes its employees and the people of this country who frequent the Capitol grounds to provide a healthy and safe environment. By going smoke-free, the House of Representatives and the Senate will contribute to the notion that nonsmoking is a social norm.

On behalf of the American Lung Association, and other members

2023468305

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

of the Coalition on Smoking OR Health, I would like to thank you for the opportunity to testify before the subcommittee on the impact of ETS exposure upon public health. Again, we urge you to step beyond the criticism offered regarding the validity of the EPA data and take into account the points we have raised today, which demonstrate a need for government action. Please know you have our organization's support and encouragement as you continue to review this very pressing issue.

2023468306

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

2023468307

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

Testimony Before the Subcommittee on Public Buildings and Grounds,
US House of Representatives, Committee on Public Works and Transportation

By: J.G. Robertson, President
Healthy Buildings International, Inc. (HBI)
10378 Democracy Lane, Fairfax, VA 22030

Thank you for the opportunity to present testimony to you today concerning H.R. 881, a bill to restrict smoking in federal buildings. I am following up on the presentation given to you by one of my staff, Mr. Simon Turner. I understand that Mr. Turner described to you the widespread problems of Sick Building Syndrome (SBS) in office buildings in this country. Mr. Turner drew on our experience of having studied approximately 1,000 major buildings and outlined to you the concept of a Building Systems Approach to deal with all types of indoor pollutants. Inherent in Mr. Turner's presentation was the fact that no company that deals with indoor air quality issues can expect to reduce all pollutant levels to zero values.

Indeed, in virtually every environment there exist small quantities of pollutants. Office air, even so-called fresh outdoor air, contains numerous chemicals, including substances categorized by EPA as Group A carcinogens. In urban areas, the air inevitably contains quantifiable levels of numerous chemicals including the Group A carcinogens asbestos, benzene and others, plus it usually contains radon.

The objective therefore is not to aim for the unobtainable. It is to use good operating practices and, where appropriate, source management to maintain the air in a generally acceptable condition that ensures the comfort and well-being of the occupants. Today I plan to spend some time exploring in more depth the options available for federal facility managers to improve the air quality for all building occupants and productively accommodate smoking staff within their buildings. As the same time they must accommodate the requirements of the nonsmokers who have a right not to be exposed to any excessive amounts of other's smoke.

Before I proceed further, I wish to state that my company makes many presentations to such recognized associations as the American Institute of Architects, American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), the Association of Energy Managers, the Gas Council, the Air Balance Council, the Building Owners and Managers Association (BOMA), and numerous Fortune 500 Corporations. Without exception, these groups complement us on sharing the results of a decade of research in this way. If, however, the tobacco industry asked us to present an identical presentation, we are likely to be branded as apologists to that industry; we are not. We are a dedicated team of consultants who believes in describing conditions exactly as we find them. Today I appear before you at the request and expense of the Tobacco Institute. However, I assure you that my findings, statements and recommendations are based on our independent research. Indeed, I challenge anyone to debate these issues with me and for anyone to point out where my statements depart from basic common sense.

Smoking Policy Options

Smoking restrictions in buildings have been part of American life over the past few years. But only recently have we seen a move to eliminate smoking entirely from office buildings. This has led to the somewhat pathetic sight of groups of smokers huddled in front of entrances of major buildings in the central business districts of many major US cities. Many of our property management and employer clients have been distinctly unhappy with this arrangement. They worry about:

- Productivity - Smokers are walking long distances to take a smoke break, staying away from their work stations longer than if they had somewhere to smoke on their own floor.

2023468308

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

- Security - It is dangerous for women especially to be hanging around on city streets, especially after dark, in many of our major cities. Bear in mind that they are not there exactly of their own volition.

- Public Image - Many employers and facility managers find the sight of individuals loitering around the front entrance of their properties to be inconsistent with the image of a productive and efficient company. Indeed, foreign visitors to one major corporation sympathized with management that they must have severe industrial relations problems in view of the picket line outside the entrances!

- Litter - The pavement outside the front entrances of most buildings is not equipped with facilities for smokers, which adds to the public image problem above.

- Also, especially when dealing with large numbers of the public (e.g. airports), groups of smokers outside entrances have to be negotiated by building users.

Thus we have been asked by a wide range of clients, from major corporations to hospitals, to help them accommodate smokers inside their buildings. This is consistent with the stated desire of this committee to be anti-smoking, but not anti-smoker. There are several progressive steps that can be used to accommodate different degrees of separation between the smoker and nonsmoker.

The first directive is that in all areas where national or local governments have enacted laws and regulations prohibiting and/or restricting smoking, then such laws should be obeyed. Also, smoking should be prohibited near flammable materials, in areas where employees handle hazardous substances, in food preparation areas, and in close proximity to sensitive machinery or equipment. In all other areas, a common-sense approach to the issue of smoking policies is of paramount importance.

Since we are dealing with a wide variety of individuals working in a multiplicity of different buildings, it is inevitable that there is no one formula that satisfies all people at all times. We suggest therefore the introduction of a step-wise series of options moving from the current practice to an informal policy of accommodation through progressively more restrictive options.

Status Quo

In buildings that have adequate ventilation and those experiencing no significant complaints of air quality issues including tobacco smoke — why change? Discretionary smoking is practiced in many buildings. In such buildings that meet or exceed the ventilation rates of ASHRAE 62-1989, complaints are rare.

Many buildings using ASHRAE's minimum ventilating standards, with or without dedicated smoking areas, practice acceptable air quality procedures. Return air from discretionary smoking areas, or designated smoking areas when ducted to the HVAC systems, can be filtered and diluted to such an extent that it meets the ASHRAE 62-1989 definition of acceptable outdoor air. Since this standard is based on the National Primary Ambient Air Quality Standards for outdoor air as set by the U.S. EPA, it is totally unreasonable that such supply air to the building could be judged to be

2023468309

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

unacceptable. In essence, if the filtration and dilution process provides supply air quality equivalent to the outdoors — so-called fresh air — then no further refinement should be judged necessary.

Designated Smoking Areas

With some thoughtfulness in the selection of the smoking area with respect to prevailing ventilation conditions, the policy of designated smoking areas works very satisfactorily.

Physical grouping of smokers and nonsmokers in discrete areas frequently obviates the concern of sensitive nonsmokers. In doing so, it is important to utilize the prevailing air currents and routes of supply and exhaust of the air. Whenever feasible, the smoking area should be concentrated nearer the exhaust grilles with the nonsmokers closer to the supply grilles. Providing the exhaust systems are sized properly, such an arrangement will ensure that the air movements will be diverted from nonsmoking areas to smoking areas and then to room exhaust. This minimizes the migration of tobacco smoke from smoking to nonsmoking areas. Thereafter, the exhaust air should exit the building or, provided it is filtered and diluted to meet nationally agreed outdoor air quality standards, it can be recycled back to the air supply system.

Air Cleaning Equipment

In designated smoking areas, supplementary air cleaning offers some worthwhile advantages. Equipment marketed specifically for removal of tobacco smoke components from room air include electrostatic precipitators, activated charcoal filters and high efficiency filters such as HEPA filtration units. All three have their place in removing substances from the air. The electrostatic precipitators and HEPA filters are very efficient at removing the finer so-called respirable suspended particulates (RSP) from the air. Correctly sized, well-serviced electrostatic precipitators or HEPA filters can remove 90 to 98 percent of these airborne particles. Neither of these filters, however, can remove gaseous components. Here we need the use of adsorbent filters using activated charcoal, potassium permanganate impregnated aluminum oxide pellets or other proprietary adsorbents. These, again presupposing they are sized correctly and serviced regularly, can remove substantial amounts of unpleasant odors, gases, nicotine, etc.

The most effective device for removing perceived signs (olfactory or visual) of tobacco smoke appears to be a combination of a "roughing" filter followed by an electrostatic precipitator or HEPA unit, followed by an adsorbent filter. Several proprietary designs of this combination are readily available worldwide. The combination of separate smoking and nonsmoking areas coupled to the use of supplementary filtration in the smoking sections and presupposing adequate ventilation rates, i.e., ASHRAE 62-1989 Standard rates, is usually more than adequate to reasonably satisfy both smokers and nonsmokers.

ASHRAE 62-1989 — Design of Smoking Lounge

Dedicated smoking lounges can be set up in most buildings. The specification of a separate ventilating system is accomplished by providing the designated lounge with a local exhaust ventilating system.

2023468310

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

ASHRAE's suggested ventilation rate for a dedicated smoking lounge is 60 cfm/person based on an occupancy rate of approximately 15 square feet per smoker. This equates to 4 cfm of exhaust air per square foot of lounge area. In sizing a dedicated smoking lounge, multiply the area of the lounge in square feet by four to yield the required capacity of the exhaust fan in cubic feet per minute.

In retrofitting an existing office or store room to function as a smoking lounge, the following steps are suggested:

- Disconnect and seal off any existing return air grilles;
- Install, preferably in a central location of the ceiling, a designated exhaust grille connected to an exhaust fan rated as described above;
- The discharge from the exhaust system should be ducted to any dedicated exhaust system serving the building, e.g., kitchen or toilet exhausts. Alternatively, the discharge can be ducted to any existing exhaust shafts or when feasible, directly through the wall to the exterior of the building. Most authorities permit linking dedicated exhaust systems together in a common duct, but individual building owners should check their local authority for regulations to avoid contravening local building codes.
- In the case of heavy utilization of the smoking lounge, it would be prudent to install in the lounge supplementary filtration. High efficiency media filters or electrostatic precipitators are recommended. The capacity of such room filters should be selected to ensure that the total volume of room air is filtered every five minutes.

$$\textit{i.e. Minimum cfm capacity of filter} = \frac{\textit{Volume of Room } ft^3}{5}$$

- In providing exhaust air capacity at a rate of 4 cfm/square foot, the smoking room will develop a negative air pressure with respect to adjacent areas. Thus, air flow will be from the adjacent areas into the smoking room, precluding the release of smoke into the adjacent areas. The movement of air from the higher pressure areas to the negative pressure areas is defined as transfer air. The use of transfer air for smoking lounges, toilets, etc. is recommended by ASHRAE to preclude the movement of annoying odors and other noxious substances into other occupied areas.

Displacement Ventilation Designs

Displacement ventilation occurs when the ventilation air flows past the contaminant source and sweeps the contaminant towards an exhaust. In the case of smoking rooms, the most effective route is to channel all the supply air from floor level and allow it to move vertically through the room, exhausting at ceiling height. This ensures that all the substances present in the indoor air, such as dusts, skin scale, tobacco smoke, body odors, microbes, exhaled breath, etc. will also rise vertically above the room occupants and be removed into the exhaust located in the ceiling. Since most of the emissions of pollutants from human activities are warm relative to the surrounding air, there is a

2023468311

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

natural tendency for them to move upwards on thermal currents. The upward flow of ventilation air speeds up this process in displacement ventilation designs.

Two options for smoking room designs are suggested. One requires a raised floor air supply system similar to the classical computer room design, the other can be installed on any existing floor using specially designed low velocity air diffusers. These designs are referred to as the Filtered Air Control Technology (FACT) and the Halton DisplaceVent System.

Halton DisplaceVent System

This is classical displacement ventilation as commonly practiced throughout Scandinavia and Europe. The supply air to the designated room is conditioned to a temperature of 66 to 68°F. This air is then ducted usually from conventional ducts in the ceiling void via vertical ducts to floor-mounted specially designed low velocity diffusers.

In essence, the supply air, several degrees cooler than the room air, spills across the floor forming a lake of clean air. Immediately on entering the room, the air starts to be warmed and therefore rises, in classical thermal currents, towards the ceiling. Any heat sources in the room, including people, creates a "heat bridge" towards the ceiling. Indeed, the supply air is induced across the surface of the room occupants forming a plume above them moving to the ceiling. This means that clean air is continually drawn past the breathing zone of the room occupants. This concept is effectively a self-regulating form of demand ventilation. The more people present in the room, the faster the upward air flow due to increased thermal loads.

Exhaust is provided at a centrally located diffuser located in the ceiling. An advantage of this DisplaceVent technique is that it is easy to retrofit into any existing areas. The low velocity diffusers come in a variety of shapes to best accommodate the geography of the room concerned. Typically they are corner-mounted to minimize loss of usable floor space, but wall units can be located inside hollow walls when available.

These displacement ventilation techniques are many times more efficient than conventional mixing type ventilation where both supply and return air are delivered or removed from the space via a common ceiling. Indeed, throughout Europe and Scandinavia, many buildings including commercial offices are preferring such displacement ventilation techniques for all occupied spaces whether smoking is practiced or not.

FACT

The FACT system, designed by Philip Morris research engineers, provides a constant volume of supply air, moving at a rate of ten feet per minute through a perforated raised flooring system. This velocity of air moving uniformly upwards throughout the room displaces the room air in a piston or plug flow, vertically upwards. The displaced air carries with it all airborne substances, which are removed via the exhaust/return air system. Typically 50 percent of the air is exhausted, the other 50 percent constitutes return air. Outside air is mixed with the air from the ducted return and the mixture is scrubbed via high quality electronic air cleaners and activated charcoal-based gas phase filters. The clean air is then conditioned via conventional heating and cooling coils before being returned to the subfloor to start the process over again.

2023468312

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

Tests conducted by independent air quality contractors prove that this system delivers air to the breathing zone of the room occupants at a quality substantially better than conventional nonsmoking offices, or the outdoor air.

Since the design is based on a raised access floor system, this design will not be practical in all buildings. However, when new construction or major remodelling is planned, this design is very much worthy of consideration.

Tobacco Smoke — An Object Lesson, A Litmus Test

Returning to the overall problem of indoor air pollution due to poor ventilation, perhaps a more serious issue for occupants of under-ventilated spaces is not so obvious. The spread of infectious diseases in poorly ventilated spaces is well documented. Radon — a colorless, odorless and extremely dangerous gas — can be concentrated in such an environment and concentrations of a wide range of volatile organic chemicals invariably increase as the ventilation rates decrease.

An interesting example of the need for optimum ventilation rates would be the hospital operating room. Not only are there increased risks of exposure to germs in this environment, but the widespread use of anesthetic gases demands high ventilation rates. Accordingly, it is not unusual for regular checks of ventilation effectiveness to be carried out in operating rooms. One technique involves the release of synthetic smoke. The visible smoke illustrates which air currents convey the air away from the room and indicates the efficiency of pollutant removal. If the smoke lingers, there is good cause for concern. Not only would the germs be trapped, leading to risks of cross infection, but also anesthetic gases could be trapped with potentially disastrous effects on the operating teams.

By analogy, the visible tobacco smoke in an office demonstrates the ventilating system capability. Excessive smoke accumulation is visible proof of deficiencies of the ventilation system. If such accumulations led to complaints in the past, sometimes the quick and easy fix was to ban smoking. However, unless the root cause of the problem was addressed — deficient ventilation capacity — then the quick fix cannot eliminate the more insidious pollutant problems that must still be present in a poorly ventilated area. In future, litigating attorneys may be quick to grasp the significance of the previous smoking bans. Low cost cosmetic improvements introduced to placate anti-smokers may buy short-term peace of mind. Unfortunately, failure to eliminate the real cause of the problems must eventually come home to roost when more chronic problems of sickness manifest themselves in the poorly ventilated office.

Indeed, the Environmental Protection Agency (EPA) headquarters building in Washington, DC illustrates just such a scenario. An inadequately ventilated building trapped all types of indoor pollutants. Early complaints of tobacco smoke accumulations led to smoking bans — much to the delight of many anti-smokers. Within two years of the smoking bans, numerous EPA employees have filed a multi-million dollar lawsuit against the managers of the building alleging toxic exposure to various volatile organic chemicals caused by inadequate ventilation.

It is unfortunate that those managers failed to recognize that the previously trapped smoke was "the canary in the coal mine." Even the anti-smokers amongst the plaintiffs who may now have developed irreversible long term injuries deserve sympathy simply because they failed to identify the true cause of their discomfort. Perhaps worst of all, from the building manager's point of view, is

2023468313

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

the fact that the plaintiff attorneys now have hard evidence that the building was operating for some considerable time with inadequate ventilation — a system that could not handle smoke cannot handle dusts, bacteria, fungi and volatile organic chemicals.

The fact is that properly designed and correctly operated ventilating systems are capable of handling all indoor substances, including smoke. This further illustrates the necessity of addressing any indoor air quality issue with a Building Systems Approach. When complaints of smoking are first voiced, it is incumbent on the management to correct the long term problem — poor air quality — and then, only if still necessary, address the issue of smoking. Forward-thinking managers who see the complete picture achieve best results. Complaints need to be correctly understood. Invariably a professionally conducted environmental evaluation of the workplace will identify existing or potential problem areas; attention to faults identified usually result in dramatically better air quality; morale improves; productivity increases; and usually the precursor of the problem, the smoke accumulation, evaporates.

Optimization of the Workplace — Building Systems Approach

In the future it seems inevitable that some form of regulation will be required to control indoor air quality as a whole. In a 1987 report "Policies & Procedures for Control of Indoor Air Quality", the National Research Council (NRC) concluded that the levels of both chemical and biological contaminants were strongly associated with the cleanliness of the heating, ventilation and air-conditioning system. They also noted the complex nature of the indoor air and the difficulties of identifying sources of pollution and suggested that solutions can usually be implemented without such identification. The EPA itself in the "Research Needs Section (Volume III) of a report to Congress issued in ....1990 noted that "more can be done to reduce overall exposures and risks by altering building designs and ventilation patterns than by approaching the problem source-by-source or pollutant-by-pollutant".

With the aim of improving comfort, productivity and attendance, forward-thinking managers are finding it cost effective to optimize the workplace from an environmental perspective. The approach is applied to both existing and planned buildings in order to prevent problems rather than attempting to cure problems after the fact.

The cornerstone of this approach is the design, operation and maintainance of buildings to specified minimum environmental guidelines. Since the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) has already published appropriate guidelines, we support and encourage the use of these specific publications:

ASHRAE Standard 62-1989, "Ventilation for Acceptable Indoor Air Quality"

ASHRAE Standard 55-1992, "Thermal Environmental Conditions for Human Occupancy"

ASHRAE Standard 52-1968 (RA 76) (Reaffirmed 1976), "Method of Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter"

ASHRAE Guideline 1-1989, "Commissioning of HVAC Systems"

2023468314

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

ASHRAE Guideline 4P exists in the form of a public review draft dated 1992, "Preparation of Operating and Maintenance Documentation for Building Systems"

With the comfort of employees at stake and the prospects of increased absenteeism, plus a loss in productivity, progressive employers are finding it cost effective to ensure that indoor air quality and employee welfare are maintained. This approach is an important management tool that should be applied to both existing and planned buildings to prevent problems rather than attempting to cure them once they happen.

Adopting the building systems approach begins with adopting a ventilation standard similar to that established by ASHRAE. This standard was developed as a consensus document and was based on "real life" feedback from architects, engineers, consumer organizations, health officials, medical researchers, building owners and operators. Their experience showed that 20 cubic feet per minute of outside air per person in an office setting was effective in controlling indoor pollution. This value was chosen to control carbon dioxide and other contaminants with an adequate margin of safety and to account for health variations among people, varied activity levels, and a moderate amount of smoking.

The second focus of the building systems approach is the correct selection of air filters in commercial buildings. Again, ASHRAE has identified a suitable starting point. Filters having a minimum efficiency of 40 to 60 percent as measured by the ASHRAE 52-76 Atmospheric Dust Spot Standard should be installed. These filters should be carefully fitted and routinely serviced.

The third step is provision for regular, not less than annual, inspections of the air handling system equipment of commercial buildings to ensure cleanliness and proper operation. These inspections should include as a minimum:

- internal chambers of each air handling unit;
- coils and drain pans;
- internal insulation of chamber walls;
- humidifier sprays and reservoirs;
- internals of main air supply ducts.

Inspections should also include verification of compliance with proper schedules of filter changes and general maintenance standards of ventilation equipment.

A large body of experience has demonstrated that a building systems approach to indoor air quality is the most effective, practical and economic path for comfortable and productive indoor environment. When buildings are operated and maintained to this standard, complaints are indeed rare and smokers and nonsmokers can usually coexist in harmony.

Existing Building Stock and Ventilation Standards

The cornerstone of a successful Building Systems Approach is the use of adequate rates of ventilation for a building. The ASHRAE Standard 62-1989 is chosen because there is a growing body of evidence that confirms that buildings built and operated with this ventilation rate results in satisfied building occupants.

2023468315

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

This specific procedure defines quantities of outdoor air of an agreed quality that must be delivered to the occupied space. Indeed, the 20 cfm/person outdoor air ventilation rate prescribed is a reversion to the ventilation rates that existed before 1973; ventilation rates specified by ASHRAE prior to the 1970's reached 30 cfm/person of outdoor air. Thus, most of the older building structures have ample capacity to operate at the 20 cfm/person rate.

A superficial look at the building stock erected in the period 1973 to 1989 suggests potential problems. During this period, minimum ventilation rates were reduced to 5 cfm/person of outdoor air. How do such buildings accommodate a Building Systems Approach?

The fact is that many of these buildings are not so badly off after all. In the first instance, design engineers who used 5 cfm per person did so using the anticipated occupancy rates of ASHRAE 62-1989 of seven persons per 1,000 ft^2. This staffing rate is high and matches the rates used to assess evacuation rates of buildings in case of fires. Therefore it reflects maximum rates of occupancy rather than typical rates. In the Department of Energy/Energy Information Administration (DOE/EIA) publication of June 1991 titled, "Commercial Buildings Characteristics 1989", the DOE estimated that the average office building has 425 ft^2 per worker yielding 2.4 persons per 1,000 ft^2. Indeed, ASHRAE 90.1P-1989 "Energy Efficient Design of New Buildings Except Low Rise Residential Buildings" uses an occupant density for use in energy calculations of 275 ft^2 per worker, yielding 3.6 persons per 1,000 ft^2. Using this average means that most buildings designed with 5 cfm are actually delivering 10 cfm/person.

Secondly, the widespread use of economizer cycles in buildings means that for extended periods throughout the year, many buildings are operating with far more than any of the minimum specified ventilation rates. Indeed, many buildings — even after the building engineer has manually closed the outside air intakes louvers — are still processing 10 to 15 cfm per person due to infiltration often brought in by the operation of exhaust fans. This was clearly illustrated in a study of a building in the City of Columbus, Ohio. When the dampers of the 38-story high rise office building were set for 5 cfm/person, the actual ventilation rate was estimated to be nearer 30 cfm/person due to massive infiltration driven by the building's exhaust fans. While this may not represent buildings specifically designed for 5 cfm/person, it does suggest that actual infiltration rates of even the so-called energy efficient buildings are considerable.

Finally, there is also accommodation in ASHRAE 62-1989 for the existing building stock. As an alternative to the Ventilation Rate Procedure, ASHRAE offers an Air Quality Procedure. This involves limiting the concentration of all known contaminants of concern to some specified acceptable levels. Thus any existing buildings can be inspected and their indoor air quality assessed and compared with the standards defined by ASHRAE. If the buildings meet these targets, and provided there is no significant level of complaints, then no further ventilation modifications are required.

New England Journal of Medicine

The press was quick to seize on an article published in a recent *New England Journal of Medicine*. This paper titled, "The Effects of Varying Levels of Outdoor Air Supply on the Symptoms of Sick Buildings" included the following:

2023468316

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

> "Increases in the supply of outdoor air did not appear to affect workers' perceptions of their office environment or their reporting of symptoms considered typical of the Sick Building Syndrome."

The media furor that we ourselves were involved in following this statement stretched as far as radio interviews in Australia to reports in the local *Washington Post*. Both, along with many others, ran articles concluding that ventilation doesn't help sick buildings. Even BOMA's in-house newsletters published a story that ventilation was not the cause of problem buildings.

How irresponsible. We can expect ignorance from non-technical reporters, but organizations like BOMA should know better. They resisted the adoption of ASHRAE 62-1989 ventilation standards. These standards boosted ventilation rates from a minimum of 5 cfm per person to an optimum of 20 cfm per person, figures which have repeatedly been shown to work wonders in diluting pollutants and improving air quality. However, once one exceeds 20 cfm of outdoor air per person, you reach the law of diminishing returns.

In the case of the *New England Journal of Medicine* article, the researchers were comparing ventilation rates of 30 cfm moving to 64 cfm! These, they themselves admitted, were not sick buildings. This is analogous to a five foot tall non-swimmer who drowns just as effectively in six feet of water as in 60 feet of water.

Legislative Options

We believe that if you determine that regulatory action is needed to control indoor air quality, the approach should not be via source control, but by a pragmatic, effective and non-onerous series of steps to enact a Building Systems Approach herein described.

Indeed, the EPA has previously stated that poor indoor air quality costs the American economy between $10 and $12 billion each year in lost productivity. Why not champion a course of action that not only dramatically increases this country's productivity, but also helps reduce the drain on its medical resources. Remember, respiratory tract infections in this country account for $15 billion in medical care costs. Some researchers have estimated that up to fifty percent of this figure may well be associated with indoor pollutants trapped as a consequence of bad ventilation.

Surely in times of government cost-cutting and medical health care controls, there can rarely be a better vehicle to provide an option that has no association with pork-barrel politics, yet can positively achieve the stated goals while improving this country's competitiveness. This is a once-in-a-lifetime, win-win situation for all — government, managers and employees.

Gray Robertson

2023468317

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

2023468318

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

US HOUSE OF REPRESENTATIVES

HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

SUBCOMMITTEE ON PUBLIC BUILDINGS AND GROUNDS

TESTIMONY OF DR. GIO BATTA GORI

ON H.R. 881: LEGISLATION TO BAN SMOKING IN FEDERALLY OWNED AND LEASED BUILDINGS

APRIL 22, 1993

2023468319

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

Mr Chairman, Members of the Subcommittee.

I am Dr. Gio Batta Gori. I will not restate my qualifications since, as you recall, I testified at the last hearing on H.R. 881, on March 11, 1993. At that time, The Tobacco Institute had asked that I present my views as a scientist in regard to the report on environmental tobacco smoke (ETS) issued by the Environmental Protection Agency on January 7, 1993[1].

The Tobacco Institute has asked that I appear before you again to offer some necessary clarification to the testimony recently submitted for the record by Dr. Alfred Munzer, on behalf of the Coalition on Smoking OR Health.

All the same, the views expressed here are my own and not necessarily those of The Institute.

In his testimony, Dr. Munzer mentions especially two studies published before the release of the EPA report on ETS, but excluded from the report itself, claiming that they sustain the EPA's report conclusions. These are the studies of Stockwell et al.[2] and Brownson et al.[3], and a close look at their data as published leads to quite obvious conclusions, opposite to those reached by Dr. Munzer.

2023468320

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

In epidemiologic jargon, risk is reported either as relative risk (RR) or as their close approximations, the odds ratio (OR) values. Expressed values are relative to the control group, which is assigned a value of 1. Values greater than 1 suggest increased risk and values below 1 suggest decreased risk, relative to the control group. In the abstract to their paper, Stockwell at al. write:

> "The risk of lung cancer more than doubled for women who reported 40 or more smoke years of household exposure during adulthood (odds ratio [OR] = 2.4 ...) or 22 or more smoke years of exposure during childhood and adolescence (OR = 2.4 ...)... When a surrogate respondent other than the patient's husband provided information of exposure, the risk estimates were considerably lower. Conclusions: These findings suggest that long term exposure to environmental tobacco smoke increase the risk of lung cancer in women who have never smoked."[2]

What the abstract fails to indicate is that data in the paper itself show that, when surrogate respondents other than the patient's husband provided information of exposure, the risk estimates were not only considerably lower, but were actually below 1, therefore suggesting that nonsmokers exposed to ETS had a lower lung cancer risk than those who were not exposed[4].

What would a scientist do when confronted with such conflicting results? First, no conclusions would be made on that basis. Second, an investigator would try to determine which source of exposure information is credible, if any. For instance, data reported in the Stockwell et al. paper inevitably pose two

2023468321

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

questions. One is whether husbands, daughters, or sons are credible sources of information for ETS childhood exposure of their wives/mothers. The other is whether women with lung cancer might -- by the very questions posed to them -- be induced to find blame by amplifying or even imagining a childhood exposure to ETS presumably generated by their own parents or relatives[2].

Equally unresolved uncertainties are to be found in the Brownson et al. study, one of the largest on record[3]. According to the abstract of the paper:

> "No increased risk of lung cancer was associated with childhood passive smoke exposure. Adulthood analyses showed an increased lung cancer risk for lifetime nonsmokers with exposure of more than 40 pack-years from all household members (odds ratio [OR] = 1.3...) or from spouses only (OR = 1.3...)... Conclusions: Ours and other recent studies suggest a small but consistent increased risk of lung cancer from passive smoking. Comprehensive actions to limit smoking in public places and worksites are well-advised."[3]

Actually, data in this study reveal not only that childhood exposure was <u>not</u> associated with an excess risk of lung cancer, but that such exposure gives odds ratios that are substantially below 1, and thus reports a reduced risk for lung cancer in ETS exposed individuals. What should one make of these results, which are in direct conflict with the reports by Stockwell et al., as noted above? At the very least an impartial investigator would suspend judgment until further clarification becomes available.

2023468322

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

Curiously, the abstract of the Brownson et al. paper fails to note that data reported in table 2 of the paper itself are quite at odds with the author's summary conclusions about risk from ETS. To begin with, the overall analysis of risk fails to uncover an excess of risk. A small excess risk is reported only for selected categories of highest exposure, and with any other exposure level an apparent decrease of risk is reported[6]. Since overall risk is the index used in all other studies considered by the EPA report, the Brownson et al. study clearly does not support EPA's conclusions despite what its abstract suggests.

This set of results clearly conflicts with the overall conclusions of the authors. Besides, in view of the Stockwell et al. data, should Brownson et al. worry that 74% of their exposure information comes from offspring or siblings and not from the patients themselves? And what about their conclusion that smoking restrictions in workplaces are well advised, when Stockwell et al. and most other studies failed to find an association for worksite exposures to ETS, and the Brownson et al. paper itself states in its text that "there was no elevated risk of lung cancer risk associated with passive smoke exposure in the workplace..."?

In fact, the entire literature assembled by the EPA report on ETS -- both for lung cancer and respiratory conditions -- suffers contradictions similar to the Stockwell and Brownson studies, and like these studies raises more questions than it can answer. And

2023468323

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

I have touched here only on the superficial problems that become obvious from the reported data themselves. There are other and major fundamental problems of which I spoke in my previous testimony before you, namely how to adjust for misclassifications of exposed and unexposed individuals, for presumed background ETS exposures, and for several lung cancer and respiratory risks that are known to confound the results.

Of course, there is also the question of statistical significance. While it is true that statistical significance is a matter of consensus, it is also true that the universal consensus prescribes margins of error ±5% or lower, and frowns upon the ±10% margin that EPA insisted on using in the ETS report. In fact, EPA would certainly reject a petition for the registration of a pesticide, for instance, if it were submitted to the agency with data based on a ±10% statistical standard. Professor Dockery, whom Dr. Munzer quotes, is right when stating that the statistical significance of data "...reflects the stability, that is the uncertainty, of their effect estimate."

Indeed, by adopting a ±10% instead of the ±5% standard the EPA report aims at giving an artificial impression of the stability and certainty of the data. By this gambit the data are not changed, but their intrinsic uncertainty is fictitiously reduced. Experts may see through this machination, but also understand that its only possible purpose is to pull some wool over less sophisticated eyes.

2023468324

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

In a separate and less known document the EPA states:

> "Our best estimate is about 3000 deaths a year. While the true number may be higher or lower, the totality of the evidence and especially the groups receiving the highest exposure levels strongly argue that the number is greater than zero."[7]

In fact, only by artificially increasing the stability of the data and ignoring contrary evidence could the EPA make this statement, because the "totality of the evidence" is also compatible with numbers less than zero.

My purpose here is not to cast aspersions on ETS studies, but rather is intended to illustrate how contradictory and essentially uninterpretable are the results if analyzed comprehensively in a true "weight of evidence" exercise. In fact, the "weight of evidence" of which the EPA report speaks is nothing but an exercise in selective use of data, and therefore not a "weight of evidence" analysis at all.

Only by selectively choosing data that suit a preconceived policy could one arrive at the conclusions that are incorrectly represented as scientific evidence to the public and to you, members of the subcommittee, by Stockwell et al., Brownson et al., most other authors of ETS epidemiologic studies, the U.S. Surgeon General, The National Academy of Sciences, the EPA and, of course, Dr. Munzer and other advocates.

2023468325

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

A major justification advanced is that by now several studies have arrived at similar conclusions. However, this is true only if one eliminates all the contrary data and ignores that most studies suffer from the same defects and shortcomings. Illusory attempts have been made to increase the significance of these studies by combining their data in what is known as a meta-analysis exercise. Yet, it is intuitively difficult to improve the overall quality of conclusions by combining individual studies that are intrinsically flawed. Rotten apples could hardly make good applesauce.

In the ETS report, the EPA has no hesitation in disclosing that their analysis "is based on the a priori hypothesis ... that a positive association exists between exposure to ETS and lung cancer"[8]. On this basis, as the agency further proceeds to disregard systematically all evidence that contradicts its a priori assumption, it may as well start trying witches again.

And trying witches again it will, if Congress and our collective social culture let the agency get away with this arbitrary use of selected evidence.

There is a simple remedy: if the EPA wishes to claim that its policies are based on scientific evidence, then it should follow those rules of scientific evidence that any scientific institution or individual scientist is expected to observe.

2023468326

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

Indeed it is strange that at a time when scientific misconduct is hotly debated in our midst and is the burning focus of Congressional hearings, official agencies of our own government are praised and feel free and proud to operate under scientific pretensions that would bring swift reprisal to any outside scientist or institution.

Mr Chairman, Members of the Subcommittee, the real issue in front of you is not passive smoking, as you may think. In reality, you are truly deciding whether our society shall in the end become hostage to less than benevolent official powers.

REFERENCES

1. Environmental Protection Agency. Respiratory health effects of passive smoking: lung cancer and other disorders. EPA, Washington, DC, 1992

2. Stockwell, HG, et al., Environmental tobacco smoke and lung cancer risk in nonsmoking women, JNCI 84:1417-1422, 1992

3. Brownson, RC, et al., Passive smoking and lung cancer. AJPH 82:1525-1530, 1992

4. See exhibit 1 (from reference 2)

5. See exhibit 2 (from reference 3)

6. See exhibit 3 (from reference 3)

7. Letter of Dr. Erich W. Bretthauer, Assistant Administrator for Research and Development, EPA, to Mr. J.J. Tozzi. December 17, 1992

8. Reference 1, page 5-2

2023468327

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

2023468328

EXHIBIT 1

Table 3. Effect of environmental tobacco smoke on lung cancer risk of nonsmoking women, according to source of case patient interview

	Source of case patient interview							
	Self (n = 70)		Husband (n = 48)		Other surrogate (n = 92)		Self and husband (n = 118)	
Exposure history	OR*	95% CI	OR*	95% CI	OR*	95% CI	OR*	95% CI
Exposure: yes/no								
Father	3.2	0.9-11.3	2.0	0.4-8.8	0.6	0.3-1.3	2.7	1.0-7.3
Husband	3.1	0.9-10.6	3.1	0.7-13.7	0.9	0.4-1.9	3.1	1.2-8.3
Siblings and others	—	—	—	—	—	—	4.3	1.3-14.2
Smoke-years								
Childhood/adolescence (parents and siblings)								
<18	4.3	1.1-16.7	2.4	0.4-12.8	0.6	0.2-1.9	3.6	1.2-10.8
18-21	2.4	0.5-10.6	1.6	0.2-10.5	0.6	0.2-2.0	2.1	0.6-7.2
≥22	6.5	1.7-25.5	1.4	0.2-9.6	1.6	0.5-4.8	4.4	1.4-13.5
P for trend		.04		.78		.68		.07
Adulthood (husband and others)								
<22	3.4	0.9-12.2	3.1	0.7-14.8	0.8	0.3-2.0	3.3	1.2-9.2
22-39	3.6	1.0-13.1	1.8	0.4-9.2	0.8	0.3-1.9	2.9	1.0-8.2
≥40	4.7	1.2-19.1	4.2	0.8-22.9	1.5	0.6-3.9	4.7	1.5-14.7
P for trend		.02		.05		.35		.006
All lifetime household exposure								
<22	2.0	0.5-7.6	3.2	0.7-14.9	0.6	0.3-1.6	2.5	0.9-7.2
22-39	4.4	1.3-15.6	1.0	0.2-5.6	0.6	0.2-1.4	3.1	1.1-8.6
≥40	4.1	1.1-14.8	3.5	0.7-16.7	1.3	0.7-3.6	4.0	1.4-11.3
P for trend		.01		.15		.11		.004

*OR, adjusted for age, race, and education (≤8 and >8 grades).

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

EXHIBIT 2

TABLE 1—Adjusted Odds Ratios (OR)[a] and 95% Confidence Intervals (CI) for the Relationship between Passive Smoke Exposure during Childhood and Lung Cancer in Women, Missouri, 1986 through 1991

	All Subjects[b]				Lifetime Nonsmokers			
Source of Exposure	No. Cases	No. Controls	OR	95% CI	No. Cases	No. Controls	OR	95% CI
All household members								
Never	430	928	1.0		323	802	1.0	
Ever	185	472	0.8	0.7, 1.1	108	364	0.8	0.6, 1.1
Cigarette pack-years								
0	430	928	1.0		323	802	1.0	
>0–15	42	129	0.7	0.5, 1.0	27	104	0.7	0.4, 1.1
>15–25	31	119	0.6	0.4, 0.9	20	91	0.6	0.4, 1.0
>25	34	117	0.7	0.4, 1.1	21	87	0.7	0.4, 1.2
Parents only								
Never	489	1021	1.0		357	877	1.0	
Ever	126	379	0.7	0.5, 0.9	74	289	0.7	0.5, 0.9
Cigarette pack-years								
0	489	1021	1.0		357	877	1.0	
>0–15	19	90	0.4	0.3, 0.7	12	70	0.5	0.2, 0.8
>15–25	27	118	0.5	0.3, 0.7	17	87	0.5	0.3, 0.9
>25	33	99	0.7	0.5, 1.1	21	74	0.8	0.5, 1.4

[a]Adjusted for age, history of previous lung disease, and active smoking (all subjects only).
[b]Includes lifetime nonsmokers and ex-smokers who had stopped at least 15 years before diagnosis or who had smoked for less than 1 pack-year.

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

EXHIBIT 3

TABLE 2—Adjusted Odds Ratios (OR)[a] and 95% Confidence Intervals (CI) for the Relationship between Passive Smoke Exposure during Adulthood and Lung Cancer in Women, Missouri, 1986 through 1991

Source of Exposure	All Subjects[b]				Lifetime Nonsmokers			
	No. Cases	No. Controls	OR	95% CI	No. Cases	No. Controls	OR	95% CI
All household members								
Never	221	527	1.0		170	470	1.0	
Ever	394	873	1.0	0.8, 1.2	261	696	1.1	0.8, 1.3
Cigarette pack-years								
0	221	527	1.0		170	470	1.0	
>0–15	88	234	0.9	0.6, 1.2	56	181	0.9	0.6, 1.2
>15–40	91	261	0.8	0.6, 1.0	62	199	0.9	0.6, 1.2
>40	146	264	1.3	1.0, 1.6	107	217	1.3	1.0, 1.8
Cigarette pack-years × hours/day[c]								
0	221	527	1.0		170	470	1.0	
>0–50	90	261	0.8	0.6, 1.1	63	206	0.9	0.6, 1.2
>50–175	89	246	0.8	0.6, 1.1	58	189	0.9	0.6, 1.2
>175	124	238	1.2	0.9, 1.6	92	192	1.3	1.0, 1.8
Spouse only								
Never	287	650	1.0		213	568	1.0	
Ever	328	750	0.9	0.8, 1.1	218	598	1.0	0.8, 1.2
Cigarette pack-years								
0	287	650	1.0		213	568		
>0–15	58	166	0.7	0.5, 1.0	32	128	0.7	0.5, 1.1
>15–40	81	258	0.7	0.5, 0.9	54	200	0.7	0.5, 1.0
>40	150	266	1.2	0.9, 1.5	110	216	1.3	1.0, 1.7
Cigarette pack-years × hours/day[c]								
0	287	650	1.0		213	568	1.0	
>0–50	64	201	0.7	0.5, 0.9	41	161	0.7	0.5, 1.0
>50–175	81	237	0.7	0.5, 1.0	52	183	0.8	0.5, 1.1
>175	126	241	1.1	0.9, 1.5	94	193	1.3	1.0, 1.7

[a]Adjusted for age, history of previous lung disease, and active smoking (all subjects only).
[b]Includes lifetime nonsmokers and ex-smokers who had stopped at least 15 years before diagnosis or who had smoked for less than 1 pack-year.
[c]The product of total pack-years and average number of hours exposed per day to passive smoke in the home.

2023468330

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

Statement of
David Zeigler
Acting Assistant Secretary
Occupational Safety and Health Administration
U.S. Department of Labor
Before the
Subcommittee on Public Buildings and Grounds
Committee on Public Works and Transportation
U.S. House of Representatives

April 22, 1993

Mr. Chairman and Members of the Subcommittee:

Thank you for this opportunity to discuss H.R. 881, the "Ban on Smoking in Federal Buildings Act." First, let me say that the Administration generally supports your efforts to protect the health and safety of Federal workers. Those efforts are consistent with the mission of the Occupational Safety and Health Administration (OSHA), which Congress charged in 1970 with the responsibility for assuring "so far as possible every working man and woman in the Nation safe and healthful working conditions..."

As you know, the scientific and medical communities have long recognized the potential adverse health effects associated with smoking. Concern about the negative effects of smoking has increased in recent years, with scientific research turning to the potential risks that second-hand tobacco smoke poses to nonsmokers. A wide range of health effects caused by second-hand tobacco smoke has been reported by the Surgeon General, the National Research Council, the Environmental Protection Agency (EPA), the National Institute for Occupational Safety and Health (NIOSH) and private researchers. These effects include acute annoyance, eye and respiratory tract irritation, low birthweight,

2023468332

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

the development of chronic pulmonary diseases, cardiovascular disease, and lung cancer. In addition, NIOSH has determined that second-hand tobacco smoke is a potential occupational carcinogen and possible heart disease risk factor in nonsmoking workers, and both the Surgeon General, and EPA in its newly released report, have classified second-hand tobacco smoke as a known human (Group A) carcinogen.

Clearly, therefore, H.R. 881 addresses a serious health issue--one which OSHA also has under very active review. In order to place my comments on H.R. 881 in perspective, I would like to briefly discuss OSHA's statutory authority to prescribe and enforce workplace safety and health standards; the agency's role with regard to Federal employees' safety and health; and the agency's specific efforts to protect workers from the hazards of indoor air pollution, including second-hand tobacco smoke.

OSHA's Authority

First I will briefly explain OSHA's authority, under the Occupational Safety and Health Act of 1970 (OSH Act), to prescribe workplace standards to regulate employees' safety and health. Section 6(b) of the OSH Act charges OSHA with setting occupational safety and health standards when there is significant risk of injury or material impairment of health.

In order to show that a workplace condition poses a material impairment of health, OSHA relies on research and technical support from other agencies, such as NIOSH (OSHA's sister agency

2023468333

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

in the Department of Health and Human Services, created by the OSH Act to conduct research and training and make recommendations regarding occupational safety and health standards), EPA, and on the private sector. OSHA may begin a rulemaking when reliable technical information to support the rule comes to its attention or when petitioned by a party.

The occupational safety and health protections provided under the OSH Act extend to private sector employees at a virtually unlimited variety of worksites. The OSH Act also provides for the safeguarding of Federal employees' safety and health through a requirement that Federal agencies comply with standards consistent with those OSHA issues for private sector employers.

Federal Employee Safety and Health Protection

With regard to Federal employees' safety and health, section 19 of the OSH Act places responsibility for their protection with the head of each Federal Agency. Executive Order 12196, which has been in effect since February 1980, defines OSHA's role and the safety and health duties of the Executive departments and agencies. The Executive Order and OSHA's implementing regulations require each agency to operate an occupational safety and health program in accordance with the principles and basic program elements issued by OSHA. Although the agencies must operate a program in accordance with OSHA's requirements, they

2023468334

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

are permitted enough flexibility to implement their programs in a manner consistent with their size and respective missions.

Federal agencies must comply with all OSHA standards for the private sector unless OSHA approves alternate standards. The agencies are required to conduct inspections of their workplaces, at least annually, respond to employee reports of imminent danger or serious hazards, and assure that unsafe conditions are abated promptly. Each agency is also required to compile, maintain, and analyze statistics on occupational injuries and illnesses. A report on each agency's occupational safety and health program is submitted to OSHA each year.

The Executive Order also assigns a role to the General Services Administration (GSA), which provides workspace for more than one million Federal employees. As an element of GSA's property management responsibilities, the Executive Order requires GSA to assure prompt attention to reports of unsafe or unhealthful conditions in facilities subject to their authority.

OSHA's Responsibilities in the Federal Sector

OSHA is given a number of responsibilities under Executive Order 12196. The agency is required to provide oversight, leadership and assistance to all Federal agencies as they carry out their safety and health responsibilities, including assistance with training materials, technical services, and programs for information exchange. Evaluation of other agencies' safety and health programs, particularly those of larger

2023468335

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

agencies, is an important aspect of OSHA's oversight responsibility. OSHA is further required to submit to the President a summary report of the status of Federal agency safety and health each year.

As part of its oversight of Federal agencies' programs, OSHA conducts inspections in Federal agencies. In FY 1992, OSHA conducted more than 1,070 inspections in Federal agencies and found more than 4,200 violations. In the overwhelming majority of cases, we find that Federal agencies cooperate to abate workplace hazards expeditiously. In fact, Federal agencies fail to abate only 3 percent of all violations in a timely fashion.

OSHA ACTION ON INDOOR AIR QUALITY

I will now turn to a discussion of OSHA's initiatives to address the overall issue of indoor air quality. The agency's past efforts have focused on providing information and guidance to its field personnel to be used in the evaluation of indoor air quality conditions in the Nation's workplaces.

Technical Assistance and Consultation

OSHA also encourages safe and healthful working environments through a variety of methods in addition to the enforcement program. For instance, the agency's field offices provide technical assistance and offer a wide variety of written publications and other information on occupational safety and health to employers and employees. OSHA's consultation service

2023468336

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

provides assistance, either at the employer's establishment or off site, on all aspects of occupational safety and health. Consultants with expertise in occupational health are available to help employers find ways of eliminating hazards associated with indoor air contaminants.

Request For Information on Indoor Air Quality

While OSHA's past efforts to address indoor air quality problems have been somewhat limited, the agency recognizes the seriousness of the issue, and is now going beyond these initial efforts to review the need for rulemaking to address indoor air quality and second-hand tobacco smoke.

In 1987, OSHA received several petitions requesting an emergency temporary standard (ETS) for second-hand tobacco smoke. The statutory requirement which OSHA must meet to issue an ETS is greater than for a normal rulemaking, requiring a finding that employees are exposed to a "grave danger." OSHA denied the petitions for an ETS based on the agency's determination that data available at that time did not demonstrate the existence of a "grave danger" due to workplace exposure to second-hand tobacco smoke, within the meaning of Section 6(c) of the OSH Act. Following the denial, one petitioner filed suit with the U.S. Court of Appeals asking for a review of OSHA's decision. The court upheld OSHA's decision.

Our determination that there was not sufficient evidence for an ETS did not, however, mean that OSHA felt there was not a

2023468337

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

hazard. OSHA proceeded in September 1991 to publish a Request For Information (RFI) in the Federal Register to obtain information on indoor air conditions. The RFI covers such issues as health effects of contaminants, the operation of ventilation systems, building maintenance programs in use, and the hazards of specific contaminants such as second-hand tobacco smoke and radon. OSHA is currently reviewing more than 1,200 comments submitted in response to the request in order to determine the appropriateness and feasibility of an indoor air standard.

Key issues addressed in the public comments concern ventilation performance standards, worker training on the operation and maintenance of Heating, Ventilation and Air Conditioning (HVAC) systems, pollution source control, and technical guidance. The specific pollutants addressed in the comments include second-hand tobacco smoke, bioaerosols, carbon monoxide, and asbestos, among others.

Following the issuance of the RFI, OSHA received several more petitions requesting that the agency promulgate a comprehensive indoor air standard, and that it separate second-hand tobacco smoke from the larger indoor air quality issue, and again consider issuing an ETS.

The issues raised by these petitions are currently under active consideration.

2023468338

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

Interagency Activities

OSHA is also working closely with many other agencies who have a role in various aspects of indoor air quality, including the Department of Health and Human Services, NIOSH, EPA, GSA and others. OSHA is a co-chair of the Interagency Committee on Indoor Air Quality, which coordinates the efforts of the Federal Government, and represents the Department of Labor on the Surgeon General's Interagency Committee on smoking.

As part of this interagency cooperation, EPA's recent report on "*Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders*" has been included in the public docket for OSHA's RFI on indoor air quality. EPA's report classified second-hand tobacco smoke as a known human (Group A) carcinogen and concluded that it is responsible for approximately 3,000 excess lung cancer deaths a year in nonsmoking adults. Of these 3,000, EPA estimates that 2,200 are attributable to nonhome exposures (combined workplace and social settings). OSHA views this as a significant study which was developed using a credible methodology, and it will be considered by the agency, along with all other comments, in order to determine further agency action.

Comments on H.R. 881

With regard to H.R. 881, OSHA supports the objective of the bill, to protect Federal employees and the public from the

2023468339

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

hazards posed by second-hand tobacco smoke in Federal buildings. The overall intent of the legislation is consistent with OSHA's mission to assure safe and healthful working conditions.

Mr. Chairman, we appreciate your efforts to focus public discussion on this important issue. Thank you again for the opportunity to testify on H.R. 881. I will be happy to answer any questions you may have.

2023468340

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

2023468341

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

Statement of

Lawrence W. Rogers, Director

Office of Workers' Compensation Programs

United States Department of Labor

before the

Subcommittee on Public Buildings and Grounds

Committee on Public Works and Transportation

United States House of Representatives

April 22, 1993

Mr. Chairman and Members of the Subcommittee:

Good morning. I am the director of the Office of Workers' Compensation Programs (OWCP), a part of the Employment Standards Administration. OWCP administers the Federal Employees' Compensation Act (FECA), which is the workers' compensation law covering all federal employees. I appreciate this opportunity to discuss with you how the FECA covers claims for injuries arising from work-place exposure to environmental tobacco smoke (ETS).

I understand the Committee is interested in the responsibility of the government for injuries that may arise out of exposure to tobacco smoke in public buildings. I will discuss this issue

2023468342

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

from the aspect of the government as an employer, and will explain how injuries or illnesses sustained by employees that arise out of work-place exposure, including to environmental tobacco smoke (ETS), are compensated. I want to emphasize that the FECA already covers ETS-related injuries and illnesses, like any other work-related illness, and will continue to do so as it is not affected by the outcome of the legislation being considered. In addition, since such injuries are covered, the FECA's exclusive remedy provision bars any attempt by employees or their families to recover damages from the government through any other means.

Before going into details on coverage, let me first provide some general background on the FECA. I will then turn to the specific issue of claims arising out of environmental tobacco smoke exposure.

The FECA provides a variety of benefits to those Federal employees who are injured on the job, and to the families of employees who die as a result of work-related factors. In 1991, we marked the seventy-fifth anniversary of the FECA, which covers more than three million civilian employees of the United States in seventy-seven government agencies around the world. Certain other individuals are also covered, including some volunteers. When an employee alleges an injury due to the job, a claim is filed with the employing agency, which processes it and sends it

2023468343

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

to one of the twelve OWCP district offices throughout the country for adjudication. An OWCP claims examiner evaluates the claim, may undertake or direct evidentiary development such as medical examinations and air quality studies, and finally makes an eligibility decision on the basis of the evidence. If the claim is accepted, appropriate benefits are paid. If the claim is denied, the claimant has a variety of administrative review and appeal options.

The benefits available under the FECA include payment of all medical expenses resulting from a work-related injury or occupational illness as well as wage-loss benefits for as long as the disability continues. Compensation for the wage loss is paid at two-thirds of the worker's salary, or three-fourths if there is at least one dependent. Death benefits available to the survivors of employees who die of work-related injuries or illnesses, provide 50 percent of the salary to a surviving spouse, and up to 75 percent if there are two or more dependent children. Another benefit is the schedule award, a payment for permanent loss or loss of use of a part of the body, such as a leg, an eye or a lung.

All FECA benefits paid last year totalled about $1.8 billion. The money is paid from the Employees' Compensation Fund, which is administered by OWCP and is replenished by billing each employing agency through a chargeback system. The appropriated fund

2023468344

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

agencies meet their chargeback costs through their annual budget requests to Congress. Costs which are not billable to an agency are paid out of the Department of Labor's appropriation.

There is no limit on the condition which may be covered by the FECA, although those which arise from an employee's willful misconduct, intoxication, or intentional injury are excluded from coverage. Claims fall into two general categories: 1) traumatic injuries, which constitute about 90 percent of all claims, are those caused by a discrete event which occurs during one work shift; and 2) occupational diseases, which develop over time because of repeated exposure, stress or strain, as for example those which arise from repeated exposure to a toxic agent.

In either traumatic injuries or occupational disease claims, the claimant has the initial burden of proving the basic elements of the claim. The elements which are most relevant when we talk about work place exposure to environmental tobacco smoke are:

- 1) **Fact of injury** - meaning the employee must show that an event or exposure actually occurred which had some impact on the individual requiring medical treatment or resulting in disability;

2023468345

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

- 2) **Performance of duty** - requiring that the exposure occurred in the performance of the job, or otherwise as a result of a factor of employment; and

- 3) **Causal relationship** - that is, that the medical condition for which compensation is claimed was caused or aggravated by the work injury or event.

The degree of proof needed varies for each case. In some straightforward traumatic injury cases, such as a broken leg resulting from a fall at work, these factors may be relatively easy to show. In more complex occupational disease cases, such as those which generally result from environmental exposures, these elements may be more difficult to establish. This is so in part because the necessary medical evidence may be more difficult to obtain. Particularly when it comes to establishing a causal relationship between the claimed condition and the exposure at work, the evidence must be objective, well-rationalized and based on scientific principles. I will return to this point a little later, in the specific context of environmental tobacco smoke.

Now that I have given some background on the FECA and how the claims process works, let me now turn to FECA coverage of environmental tobacco smoke. First, FECA claims have been filed due to work place injuries from environmental tobacco smoke and

2023468346

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

such claims have been accepted and compensation paid. Although OWCP's data base is not indexed in specific enough detail to identify all claims arising from exposure to tobacco smoke, we have identified a number of cases in which claims for ETS-related injuries were accepted. Although we do not know exactly how many ETS-related claims have been filed, we believe the number of cases involved to date has been relatively small.

The claims have been for both traumatic and occupational diseases, and the medical conditions resulting from ETS exposure which have been accepted include aggravation of asthma, rhinitis, non-specific lung disease, allergic reactions (resulting in coughing, hoarseness and swelling of the airways), and hypersensitivity to tobacco smoke. (We can find no record, however, of having received or approved a claim of lung cancer as a result of tobacco smoke.) Injuries have disabled individuals to varying degrees. Many of the approved claims involved only medical costs or very short periods of disability. Others were for temporary aggravation of conditions such as asthma, which the individuals already had but which were exacerbated for short periods. Other cases, however, involve long-term disability; we have identified claims in which the employee has been totally disabled for several years, and compensation and medical benefits paid total thousands of dollars.

2023468347

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

It is clear from our review of FECA claims involving ETS-related injuries that the system has shown itself to be able to elicit and interpret the necessary medical evidence in regard to the adjudication of claims, and provide the appropriate medical and other benefits. It is also clear that the ETS-related injuries have resulted in direct costs to the government. While I am not here to speak to the merits of the proposed legislation to ban smoking in all government buildings, the proposed legislation would not change the responsibility of the government, in its role as an employer, for ETS-related injuries. Nor should the growth in scientific evidence concerning environmental tobacco smoke, such as set forth in the recent testimony before this committee by the Surgeon General and by the Director of the Office of Health and Environmental Assessment of the Environmental Protection Agency, have a significant impact on the FECA adjudication process or necessarily result in the acceptance of a large number of additional claims. As illustrated by the cases I mentioned earlier, there has been (for Federal workers' compensation purposes) a sufficient medical basis to causally relate environmental tobacco smoke to individual medical conditions.

I would add that only as far as the proposed legislation and the new scientific findings raise the consciousness of employees regarding the hazards of environmental tobacco smoke, it is possible that we may see an increase in the number of claims

2023468348

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

filed. Moreover, in some cases where evidence has not previously been available to establish a causal connection between a particular condition and tobacco smoke, the new scientific studies may make it easier for claimants to support some claims for individual medical conditions. This may be especially common for persons with conditions that have a long latency period. Further, it is possible that, over time, claims would decrease, because of the lack of smoke to which workers would be exposed. I want to emphasize that we have no systematic basis for these conclusions, however, but draw them from anecdotal observations of the process as it now exists.

I appreciate this opportunity to tell you about OWCP and its handling of claims for environmental tobacco smoke related injuries by Federal employees. I will be happy to answer any questions you may have.

2023468349

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

20234683350

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

HARVARD SCHOOL OF PUBLIC HEALTH

Department of Environmental Health
Environmental Epidemiology Program

Prepared testimony by Douglas W. Dockery, Associate Professor of Environmental Epidemiology, April 22, 1993.

Hearing on H.R. 881, a bill to ban smoking in all Federal Buildings by the Committee on Public Works and Transportation, Subcommittee on Public Buildings and Grounds.

Tobacco smoke is a known cause of lung cancer. If tobacco smoke were held to the same standards applied to other environmental carcinogens found in public buildings, there is no question it would be banned. We consider it unacceptable to passively expose people in public buildings to asbestos, formaldehyde, or radon. It therefore should not be acceptable to passively expose people in public buildings to tobacco smoke.

The carcinogeniticity of tobacco smoke has been demonstrated by all methods used to assess risk, that is in animal bioassay studies, genotoxicity studies, and epidemiologic studies. Tobacco smoke is not only a recognized cause of cancer, it is a strong carcinogen. Epidemiologic studies have shown that active smokers develop lung cancer at a rate at least ten times that of never smokers. Epidemiologic studies have shown that the risk of lung cancer associated with tobacco smoke increases with exposure, either as measured by number of cigarettes smoked per day, or years of cigarette smoking. There is no evidence from these studies of active smokers that even the smallest exposures to active smoking are free of risk. It follows immediately that exposures to low concentrations of tobacco smoke should be associated with increased risk of lung cancer. **The evidence that tobacco smoke is such a strong cause of lung cancer, without any other consideration, is sufficient to define environmental tobacco smoke as a lung cancer hazard and to ban smoking from all Federal Buildings.**

2023468351

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

There is also substantial evidence showing that nonsmokers are passively exposed to tobacco smoke at nontrivial levels. A considerable mass of data has been developed estimating environmental exposures to tobacco smoke, direct measurements of ambient indoor concentrations of tobacco smoke, and direct measures of dose based on biologic tissue samples. Non-smokers have levels of cotinine, a specific nicotine metabolite, which are 1/10% to 2% of those of smokers. **The evidence that large numbers of people in the general population are exposed to this carcinogen is sufficient to define environmental tobacco smoke as a lung cancer hazard and to ban smoking from all Federal Buildings.**

Given that tobacco smoke is associated with increased incidence of lung cancer down to the lowest exposures among active smokers, and that there is widespread environmental exposure to tobacco smoke among nonsmokers, increased lung cancer incidence should be expected among never smokers chronically exposed to environmental tobacco smoke. Indeed, increased incidence of lung cancer has been consistently observed in studies of never smoking women married to husbands who smoke. **The evidence from epidemiologic studies that never smoking women with smoking spouses have increased risk of lung cancer only confirms what was apparent from the carcinogenicity of tobacco smoke itself.**

Given the compelling evidence cited above, the hypothesis to be tested (that is, the null hypothesis) is not whether environmental tobacco smoke has a statistically significant association with lung cancer in these epidemiologic studies. Our prior hypothesis would certainly be that environmental tobacco smoke increases the risk of lung cancer. Thus the hypothesis to be tested is that environmental tobacco smoke does not increase lung cancer risk. Of the 30 studies reviewed by the EPA[1], only one study[2] was not consistent with an increased lung cancer risk associated with spousal smoking. The consistency of these results across so many independent studies showing a positive association between lung cancer and

---

[1]Environmental Protection Agency, "Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders." EPA/600/6-90/006B, May 1992.

[2]Wu-Williams AH, Samet JH. Environmental tobacco smoke: exposure response relationships in epidemiologic studies. Risk Analysis. 1990:10:1.

2023468352

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

spousal smoking is a very strong statement of the robustness of those findings. In epidemiologic studies of effects of environmental hazards such consistency and robustness is a much more important indicator of causality than statistical significance.

The attached figure presents my summary of the available epidemiology data showing the association of lung cancer in non-smoking women with cigarette smoking of their husbands. Results from 32 studies are presented. For each study, the estimated relative odds of lung cancer associated with husband's cigarette smoking is presented along with the 95% Confidence Interval for that estimate. A relative odds greater than one, that is on the right side of the plot, indicates that lung cancer in these nonsmoking women is positively associated with their husbands' smoking. It is clear from this plot that almost all of these studies have found such a positive association.

Critics have suggested that these associations may be the result of bias or confounding in the data. That is, the observed associations are due to some characteristic other than spousel smoking which is related to both lung cancer and spousel smoking. While each study has weaknesses, and bias and confounding must be considered in any study, it is my interpretation of these studies that bias and confounding have generally acted to underestimate the true association between lung cancer and environmental tobacco smoke exposure. Other design issues, such as the fact that spousel smoking is only a crude measure of environmental tobacco smoke exposure in the home, at work, and in other settings, will also produce underestimates of the true association.

Critics have also suggested that the use of meta-analytic techniques, as in the EPA Review, are inappropriate for epidemiologic data. In this I strongly disagree. Meta-analysis is a well developed method for contrasting and combining results from different studies. The concepts and methods are actually a simple extension of statistical analysis commonly used in epidemiology. These methods are commonly used in public health research, particularly

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

in the evaluation of clinical trials[3]. Meta-analysis has been applied in epidemiologic research for many decades[4] and has recently been reviewed in two scholarly reviews[5,6]. The use of these methods by the EPA is not only appropriate, but is a significant advance in evaluating the epidemiologic literature.

In my opinion, the epidemiologic evidence for an association between lung cancer and environmental tobacco smoke is very compelling. The EPA Review is a comprehensive, rigorous, balanced and scholarly summation of the current state of the science, which supports such a finding. While epidemiologic studies alone cannot demonstrate causality, the universal finding of the carcinogenicity of tobacco smoke in animal and genotoxicity studies corroborates the epidemiology. There is no doubt that tobacco smoke is an environmental carcinogen, which should be banned from Federal Buildings and all other public facilities.

---

[3]Louis TA, Fineberg HV, Mosteller F. Findings for public health from meta-analysis. Annual Reviews of Public Health 1985; 6:1-20.

[4]MacMahon B, Hutchinson GB. Prenatal x-ray and childhood cancer: a review. Acta Un Int Cancer 1964; 2:1172-1174.

[5]Greenland S. Quantitative methods in the review of epidemiologic literature. Epidemiologic Reviews 1987; 9:1-30.

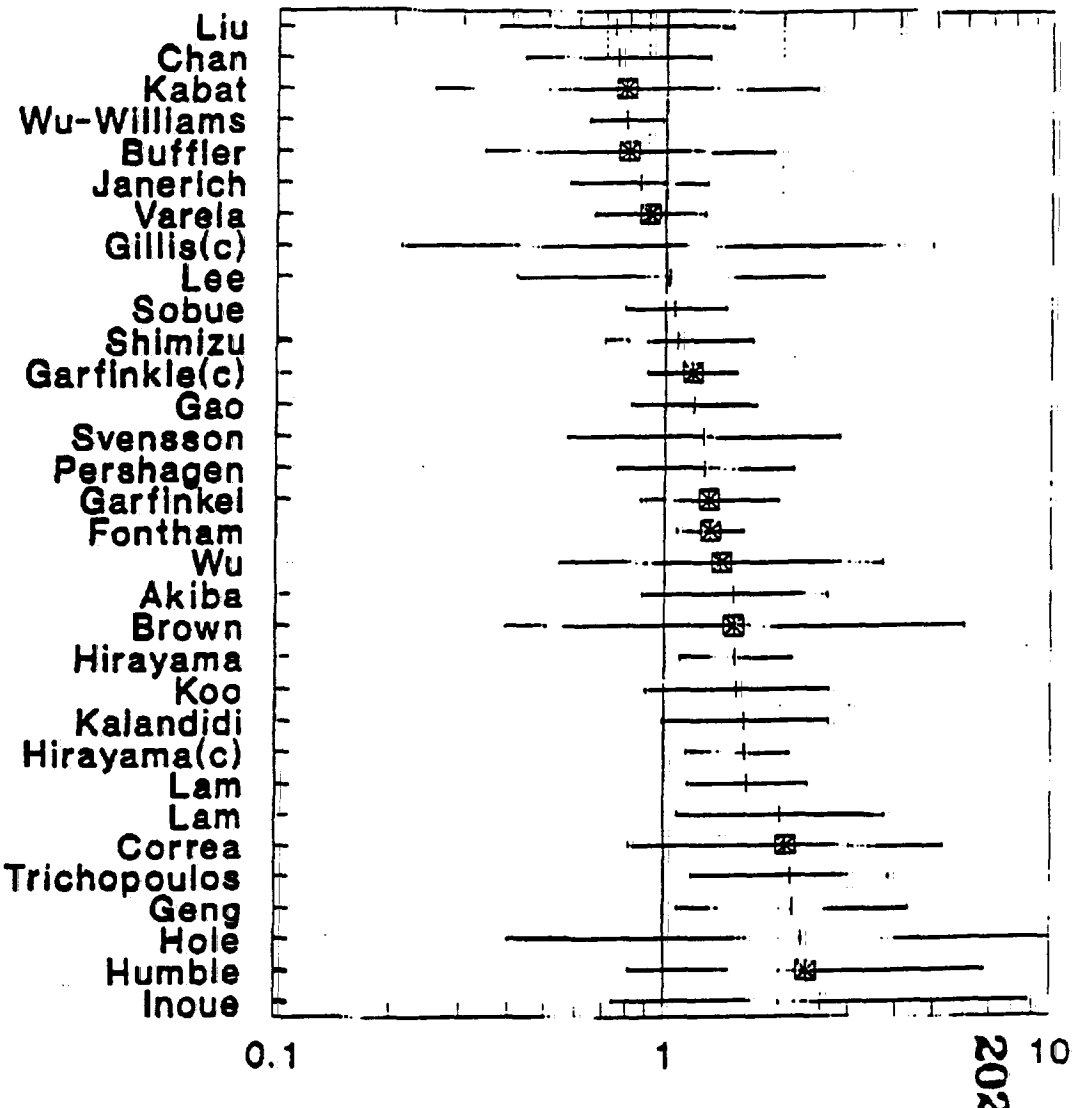
[6]Dickersin K, Berlin JA. Meta-analysis: State-of-the-Science. Epidemiologic Reviews 1992; 14:154-176.

2023468354

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

EPIDEMIOLOGIC STUDIES OF PASSIVE SMOKING & LUNG CANCER

Studies



2023468355

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

R: REDACTED MATERIAL

BIOSKETCH

Dr. Douglas W. Dockery is Associate Professor of Environmental Epidemiology at the Harvard School of Public Health and Assistant Professor of Medicine (Epidemiology), Channing Laboratory, Harvard Medical School and Brigham and Women's Hospital.

REDACTED

and received his BS in Physics from the University of Maryland at College Park. He has a MS in Meteorology from MIT and a ScD (Doctor of Science) in Environmental Health from the Harvard School of Public Health. Dr. Dockery is conducting epidemiologic research on the natural history of respiratory disease and the respiratory health effects of air pollution. He is principal investigator of the Six Cities study of the longitudinal health effects of sulfur oxide and particulate exposures among adults and children in the United States, and co-principal investigator in the Twenty-Four Cities study of the effects of acid aerosols on respiratory health of children in the United States and Canada. In addition, he is collaborator or advisor in studies of the health effects of air pollution in the Netherlands, Switzerland, Germany (East and West), Czechoslovakia, Brazil, Mexico City, and Beijing. Dr. Dockery has more than 45 published articles, primarily describing epidemiologic studies of the health effects of air pollution, both outdoors and indoors, on children and adults. In addition, Dr. Dockery and his colleagues have published on the normal growth and decline of pulmonary function, the effects of smoking (active and passive) on respiratory health, and measurement of exposure for environmental epidemiologic studies. Dr Dockery is also working on synthesizing data from epidemiologic studies of environmental health effects from independent studies using meta-analytic methods. He teaches graduate courses on *Respiratory Epidemiology* and *Environmental and Occupational Epidemiology* at the Harvard School of Public Health.

2023468356

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

2023468357

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

SUBCOMMITTEE ON PUBLIC BUILDINGS AND GROUNDS

REGARDING H.R. 881: A BILL TO PROHIBIT SMOKING IN FEDERAL BUILDINGS

COMMENTS OF MAURICE LEVOIS, PH.D.
APRIL 16, 1993

In addition to my oral comments and the written comments that accompanied my appearance before this subcommittee, I should note that I have also submitted written answers to specific written questions posed by Congressman Emerson. Those questions had to do with what I regard as EPA's inappropriate use of tests of statistical significance. This topic is closely tied to other problems I see in the EPA's selective use of the available data. I would like to take this opportunity to point out some of the other problems.

Spousal smoking is a biased definition of ETS exposure.

A fundamental problem with the ETS epidemiologic study design is that all of the studies use spousal smoking as the basic definition of ETS exposure. Spousal smoking is not just an imprecise definition (i.e. resulting in nondifferential misclassification of exposure). It is also biased.

It is generally recognized that the spousal smoking definition leads to selective misclassification of active smokers. Since spouses of smokers in ETS studies are more likely to be current or former smokers themselves, the spousal smoking study design produces a biased estimate of the association of lung cancer and ETS exposure. Attempts at *post hoc* correction for possible effects of smoker misclassification, such as employed by the EPA in their

2023468358

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

ETS risk assessment, are not based upon sound data. The assumptions employed in such exercises simply reflect the biases of the authors. *Post hoc* correction cannot be regarded as an acceptable substitute for employing an unbiased study design.

In addition, the spousal smoking definition of ETS exposure confounds many lung cancer risk factors (such as socioeconomic status, prior lung disease, diet, and occupational exposure) that are shared by spouses and are known to be more common in households where there is a smoker.

Biases introduced when spousal smoking is employed as a proxy for ETS exposure could easily be responsible for the very weak pooled spousal smoking / lung cancer association reported in a number of studies. It is noteworthy that meta-analysis of results of studies that have looked at ETS exposure in the workplace (as opposed to using spousal smoking as the ETS exposure definition) shows no increase in ETS related lung cancer risk. This important discrepancy undermines both the validity of the spousal smoking proxy and the inference that ETS exposure causes lung cancer.

Meta-analysis compounds bias in ETS epidemiologic data.

Meta-analysis (or pooling) of ETS epidemiologic data cannot correct for biases introduced by the spousal smoking definition of ETS exposure. However, meta-analysis can make the effects of biases introduced by the spousal smoking study design appear statistically significant. Because the individual ETS studies are flawed, meta-analysis of these studies is not a valid approach to

2023468359

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

ETS risk assessment. Despite this objection, EPA has relied exclusively on meta-analysis of spousal smoking epidemiologic data, and numerous related assumptions, to arrive at their ETS / lung cancer risk estimate. For this reason it is necessary to examine critically the EPA's meta-analysis methodology.

There are instances in which EPA has selected as the best summary risk estimate for a published ETS research report a value that is at odds with the stated conclusions of the authors of the report. This sort of selective use of the data is unavoidable whenever a meta-analysis is performed. It is essential that a meta-analysis be conducted according to a clear and specific set of rules for selecting one result that best represents each study. Since most ETS epidemiologic studies employ numerous operational definitions to characterize study factors, and report numerous results, if there were no prior rule for selection, then a statistician could easily bias the meta-analysis through biased selection of results.

The risk of lung cancer mortality in wives of smokers compared to the risk in wives of nonsmokers defines the overall spousal exposure relative risk for each study. This is the result traditionally used to represent each study in an ETS meta-analysis because it is the most uniform result across all of the studies, and it takes advantage of the most data. This value may not always be reported, but in almost every case it can be calculated based upon other data published in the reports. If an overall spousal smoking relative risk is not stated, and it cannot be calculated,

2023468360

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

then the study cannot be used in an ETS meta-analysis, regardless of the claims made by the authors.

Multiple comparison bias.

Because both ETS exposure and lung cancer are often defined in a variety of ways in a single study there is often a question as to the meaning of inconsistent or contradictory results. For example, in a single study the researchers may define 'ETS exposure' as: ever- versus never- exposed to ETS as a child, as a spouse, or in the workplace; as years of childhood, spousal, or workplace ETS exposure; as the average number of packs of cigarettes smoked by parents, spouse, or co-workers; as 'pack X years' of exposure as a child, spouse, or in the workplace. The researchers will then proceed to run numerous analyses on a combination of these and other definitions derived from looking at multiple lung cancer cell types and/or other subsets of the cases and controls.

When many closely related significance tests are conducted in a single study, and the results of only one or two of the tests are reported, the nominal significance levels of the results are not valid. In reporting the results of ETS epidemiologic studies the authors are usually able to select from among multiple results, and generally ignore the fact that multiple comparisons may have biased the nominal significance levels that are reported.

Epidemiologic research reports must be read critically. Such observational studies are not entirely objective. Reporting biases are a consequence of the common practice of employing multiple

2023468361

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

operational definitions of study factors. A critical reader should evaluate the adequacy of a study's design, the way in which cases and controls are selected, the way in which exposures and outcomes are defined, the attention paid to potential sources of artifact, and the completeness of the final study report. The ETS epidemiologic studies do not stand up well to such critical evaluation.

One-sided versus two-sided significance tests.

Given the serious flaws in the underlying spousal smoking study design, the strong conclusions often stated by authors of these studies are not convincing. Debating the statistical significance of reported ETS results may only serve to distract attention from the fact that the results are biased in the first place. However, keeping fundamental study adequacy issues in mind, it is important to evaluate the EPA's use, or misuse, of statistical significance tests to support their conclusions.

The first draft of the EPA's ETS risk assessment used a standard two-sided, 95% significance test for the main spousal smoking analysis. In their final risk assessment, after seeing the data and noting that the standard test would not have been statistically significant, the EPA shifted to a one-sided, 90% significance test. This is a biased statistical approach that is contrary to accepted standards (Armitage and Berry, 1987; Fleiss, 1973).

Prior to release of the final EPA risk assessment new spousal

2023468362

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

smoking data were published that brought the pooled lung cancer risk estimate down to a level that is not even significant using a one-sided 90% confidence level. Such statistical instability plainly contradicts EPA's claim of "medium to high" confidence in their ETS risk estimate, and underscores the need for higher scientific standards than have been employed in the ETS risk assessment.

Conclusion.

There are fundamental flaws in the EPA's ETS risk assessment. The ETS epidemiologic data are derived from a flawed spousal smoking study design. Meta-analysis of biased spousal smoking study data compounds the effects of bias, and is not a valid methodology for ETS risk assessment. Recent contradictory study results have been ignored by EPA, as have the contradictory data from studies of ETS exposure in the workplace which do not show a risk elevation. The use of one-sided, 90% significance tests, after viewing the data and observing that use of the standard two-sided, 95% confidence level would not produce a significant result, is contrary to accepted statistical methodology and reflects a clear bias in favor of statistical significance at the expense of stability and confidence. The EPA's ETS risk assessment should not be relied upon as an unbiased estimate of the purported risk of ETS exposure because it exploits flawed data and employs biased, unscientific methods.

2023468363

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

2023468364

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

SUBCOMMITTEE ON PUBLIC BUILDINGS AND GROUNDS

REGARDING H.R. 881: A BILL TO PROHIBIT SMOKING IN FEDERAL BUILDINGS

RESPONSE TO WRITTEN QUESTIONS OF CONGRESSMAN BILL EMERSON

BY MAURICE LEVOIS, PH.D.
APRIL 16, 1993

QUESTIONS

1. "Dr. LeVois, you have reviewed the statistical approach that EPA used in its ETS report, and you have heard the criticisms and defenses of that approach that have been offered today. You have had experience in the application of epidemiologic techniques to regulatory problems at another federal agency, the Centers for Disease Control. How does what the EPA did compare with what other agencies do? Is the EPA an aberration, or does the problem of policy-based science occur throughout the public health establishment?"

2. "As a non-scientist, I want to get an understanding of just what it means to shift the standard for statistical significance the way that EPA did. I don't know much about epidemiology, but I do know something about political polls.

(a) It is true, isn't it, that by doubling the possibility of error from 5 percent to 10 percent in the ETS studies the EPA was doing essentially the same thing as doubling the margin of error in a political poll from the typical plus or minus 5 points to plus or minus 10 points?"

2023468365

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

(b) I certainly wouldn't want to pay for a political poll that predicted results that could swing 10 points either way. What about health studies with such wide margins of error? Are they worth anything?"

ANSWERS

I hope to explain why I do not believe that the EPA has used statistics appropriately in their ETS risk assessment. My answers to Congressman Emerson's questions can be prefaced by the comments of two recognized authorities in the field of applied biostatistics concerning the use of what scientists refer to as "one-tailed" versus "two-tailed" tests of statistical significance:

J.L. Fleiss - "By performing a one-tailed test, [the researcher] is ruling out as unimportant the possible inference that p_1 [rate of disease in the exposed group] is significantly greater than p_2 [rate of disease in the unexposed group]."

Page 20.

"...a one-tailed test is called for only when the investigator is not interested in a difference in the reverse direction from that hypothesized."

Page 21.

2023468366

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

"If, however, the investigator intends to report his results to his professional colleagues, he is ethically bound to perform a two-tailed test."

Page 21.

Joseph L. Fleiss. Statistical Methods for Rates and Proportions. New York: John Wiley & Sons, 1973.

P. Armitage - G. Berry

"The critical value for a one-sided test at level *P* is therefore the same as that for a two-sided test at level 2*P*. In a sense the distinction is semantic. On the other hand there is often a temptation to use one-sided tests rather than two-sided tests because the probability level is lower, and therefore the apparent significance is greater. A decision to use a one-sided test should *never* be made after looking at the data and observing the direction of the departure. Before the data are examined one should decide to use a one-sided test only if it is quite certain that departures in one particular direction will always be ascribed to chance, and therefore regarded as nonsignificant however large they are. This situation *rarely* arises in practice, and it will be safe to assume that significance tests should almost always be

2023468367

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

two-sided." Page 98.

P. Armitage and G. Berry. Statistical Methods in Medical Research. 2nd ed. Oxford, England: Blackwell Scientific Publications Ltd, 1987.

The EPA has not used an appropriate significance test for their meta-analysis of data from selected epidemiologic studies on the relationship of spousal smoking and lung cancer (the central analysis used by EPA to estimate an ETS/lung cancer risk), nor has the EPA adequately addressed fundamental problems in the data used for that analysis.

The first draft of the EPA's ETS risk assessment used a standard two-sided significance test for the main spousal smoking analysis. Had the same two-sided significance test been used in the revised EPA risk assessment the result would not have been statistically significant. In their final risk assessment the EPA shifted to a one-sided statistical test. This shift suggests that the EPA decided to use a one-sided significance test after reviewing the data and observing that a two-sided test did not achieve statistical significance. This is exactly the error that Armitage and Berry warn against.

A test of statistical significance is only an aid to decision-making. Such tests help to describe the level of confidence one has that a given result is not due to chance alone. The 95% or 99% confidence levels for significance tests are standards used by researchers both in federal agencies and the scientific community

2023468368

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

in general, in both epidemiology and risk assessment. The 90% confidence level used in EPA's ETS risk assessment would not be accepted by that Agency if it were, for example, submitted by a manufacturer as part of an application for an EPA-regulated pesticide. A one-in-ten error rate is simply not good enough, and should not have been used in the EPA's ETS risk assessment.

Prior to release of the EPA document new spousal smoking data were published in two studies, including the largest U.S. study, that brought the pooled lung cancer risk estimate down even further, to a level that would not be significant at even the 90% confidence level. Such statistical instability plainly contradicts EPA's claim of "medium to high" confidence in their ETS risk estimate, and underscores the need for higher scientific standards than they have employed.

Tests of statistical significance are valid aids in decision-making only if the underlying data are unbiased. The error EPA made by employing a one-sided, 90% significance test should not obscure a more basic and important error. The EPA has pooled results from spousal smoking studies that are not adequate to answer questions about possible health effects of ETS exposure. This is because spousal smoking is a biased proxy for ETS exposure. Spouses of smokers tend to have greater exposure to other lung cancer risk factors than do spouses of nonsmokers. The EPA attributes all of the reported spousal smoking-associated lung cancer risk to ETS exposure, even though it is clear that spouses of smokers tend to have poorer diets, lower socioeconomic status,

2023468369

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

and increased occupational exposures, and are more likely to have a history of prior pulmonary illness than are the spouses of nonsmokers. The EPA's ETS meta-analysis simply pools biases contained in the individual studies to produce a biased result.

Biases introduced when spousal smoking is employed as a proxy for ETS exposure could easily be responsible for the very weak reported pooled spousal smoking / lung cancer risk estimate. It is noteworthy that meta-analysis of results of studies that have looked at ETS exposure in the workplace (as opposed to using spousal smoking as the ETS exposure definition) shows no increase in ETS related lung cancer risk. This important discrepancy undermines both the validity of the spousal smoking proxy and the inference that ETS exposure causes lung cancer.

2023468370

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

2023468371

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON PUBLIC WORKS
SUBCOMMITTEE ON PUBLIC BUILDINGS AND GROUNDS

Responses to Questions by Representative Emerson
on H.R. 881

Gio Batta Gori, Ph.D

April 20, 1993

Question 1: "Dr. Gori, in your critique of the EPA report you point out that this is not an isolated instance where the agency has mishandled a scientific issue. If Congress were to bless the agency's behavior by passing this legislation, what kind of message do you think that would send to EPA and to other agencies that are charged with basing policy decisions on sound science?"

I would base my response to this question on the very significant report, "Safeguarding the Future: Credible Science, Credible Decisions," to which I referred briefly in my testimony at the March 11 hearing. This report was issued in 1992 by a panel of distinguished scientists commissioned by former EPA Administrator Reilly to evaluate the agency's problems in dealing with scientific issues.

Perhaps the most striking aspect of the report is that it had to be commissioned at all. EPA is hardly typical in requiring outside help to sort out what may fairly be called a crisis of public confidence. Recall what the Expert Panel had to say: "Currently, EPA science is of uneven quality, and the Agency's policies and regulations are

2023468372

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

frequently perceived as lacking a strong scientific foundation." And furthermore, "EPA science is perceived by many people, both inside and outside the Agency, to be adjusted to fit policy." In my testimony, I pointed out how the agency's ETS risk assessment is a textbook illustration of these problems.

From dioxin to Alar, EPA has time and again placed itself in the position of having to backpedal from alarming statements about environmental health effects once the lack of scientific foundation for such statements became clear. No other agency whose mission is to take regulatory action on the basis of sound science has such a dismal record. It is my view that allowing the ETS risk assessment to stand and, indeed, to form the basis for public policy decisions, would send precisely the wrong message to the agency. Rather than forcing itself to confront the sober lessons of the "Safeguarding the Future" report, EPA would instead pay lip service to the report while continuing to lurch from one exaggerated environmental crisis to the next, wasting scarce resources and sowing panic in the bargain.

As a citizen, I am very concerned that allowing EPA to continue without fundamentally altering its behavior will allow the agency to jettison the due process requirement that underlies its mandate. Allowing EPA to regulate and make policy pronouncements without an adequate scientific basis--as it is attempting to do in the case of ETS--would mean that the

2023468373

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

agency would be free to choose any pretext to impose its will on the public.

Finally, as a scientist I have a special concern about EPA's behavior. If Congress were to bless EPA's ETS risk assessment by enacting H.R. 881, it would in effect condone careless and shoddy science. As has been the case with so many recent examples, the exaggeration of risk reflected in the EPA report will contribute to the discrediting of science in the eyes of the public, who will no longer know whom or what to believe.

Question 2: "Both Congress and the public are forced to trust the sound judgment of agencies that make decisions on complex scientific issues. What we have seen with regard to the ETS issue is an institutionalized bias that does not repay our trust. What can we do to ensure that this sort of thing does not continue?"

It is an inevitable fact among environmental regulatory agencies that in order to justify their funding, they must be constantly on the alert for new objects of their regulatory zeal. Realistically, I do not think that we will eradicate this tendency. Instead, it must be controlled. This can perhaps best be accomplished through much more

2023468374

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

dedicated use of the existing control mechanisms than in the past.

Our objective should be to keep regulatory agencies trustworthy by requiring them to adhere to universally accepted standards of scientific evidence whenever they assert scientific validity as the justification for their regulations. It seems to me that leadership within the agency is the first prerequisite here. The Administration and Congress must ensure that agency appointees will place scientific quality and objectivity above short-term advantage in power or publicity. I hope that Congress will keep this in mind as new EPA appointments are reviewed at the key Assistant Administrator level.

Also, the managers must insist that the agency's scientists provide sound scientific advice--not, as clearly was the case with ETS, whatever justification is desired for a predetermined policy decision. The reward structure for career agency scientists should be geared accordingly.

Other aspects of what might be termed the agency culture should be made to fall in line with the renewed emphasis on scientific objectivity. For example, the review process whereby EPA employs outside scientists to evaluate the quality of agency efforts such as risk assessments obviously is tailor-made to provide an ongoing check on bureaucratic tendencies to slight scientific rigor. That, at least, is the ideal.

2023468375

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

Unfortunately, we have witnessed a much less than ideal application of this mechanism in the case of ETS, where the relevant Science Advisory Board panel made no serious effort to review the agency's work comprehensively or objectively. Many of the panelists had either staked out strong antismoking positions that precluded any objective examination of the ETS evidence, or were beholden to EPA for a series of grants and contracts, which obviously works against dispassionate review of agency efforts. The solution to this problem might be to oversee much more carefully the process whereby these panels are constituted, to ensure representation of all credible scientific viewpoints, and to enforce much more rigorous standards regarding conflicts of interest and bias.

2023468376

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

20234683777

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

COVINGTON & BURLING

April 21, 1993

LEGAL MEMORANDUM

A BAN ON SMOKING IN FEDERAL BUILDINGS IS NOT REQUIRED TO ADDRESS LIABILITY CONCERNS

Representative Traficant has introduced a bill (H.R. 881) to ban smoking in all federal buildings. He has suggested that such a ban is required to eliminate the liability that the federal government otherwise may have to nonsmoking employees should smoking continue to be permitted in federal buildings. In this connection, Representative Traficant has cited the recent report of the Environmental Protection Agency classifying environmental tobacco smoke ("ETS") as a Group A ("known human") carcinogen.

For the reasons discussed in this memorandum, a ban on smoking in federal buildings is not warranted by liability or other concerns. The regulations that currently govern smoking in facilities controlled by the General Services Administration reasonably accommodate nonsmoking federal employees and effectively eliminate the working conditions that gave rise in the past to claims by nonsmoking employees. H.R. 881 is unreasonable and should be rejected.

SUMMARY

- H.R. 881 goes further than necessary to accommodate nonsmoking federal employees.
- The EPA Report does not expose the federal government to new liability for allowing smoking in the workplace.
  - -- EPA's assertion that ETS can cause lung cancer is not new, and prior suggestions of harm have not produced an avalanche of claims against employers.

2023468378

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

-- In and of itself, EPA's classification of a substance as a Group A carcinogen does not represent a determination that the substance is necessarily hazardous at levels typically encountered.

-- Studies of workplace smoking, which EPA ignored in its report, overwhelmingly fail to support claims of an increased risk of lung cancer.

-- The U.S. Occupational Safety and Health Administration should be allowed to complete its consideration of whether workplace exposure to ETS should be limited for health reasons.

- The EPA Report is not legally determinative on the question of whether ETS can cause lung cancer.
- Even after the EPA Report, individual claimants face nearly insurmountable problems of proving causation.
- Current federal smoking regulations protect against claims under the Federal Employees' Compensation Act.
- The federal government does not face potential liability under the Federal Tort Claims Act.
- The Americans with Disabilities Act and the Rehabilitation Act of 1973 do not require the federal government or other employers to ban smoking.
- Banning smoking would do little to address the risk of claims based on poor indoor air quality.

DISCUSSION

I. H.R. 881 goes further than necessary to accommodate nonsmoking federal employees.

Wholly aside from any legal considerations, the federal government should accommodate nonsmoking employees. It should not force its employees to work under conditions that may prompt complaints of physical irritation or aggravate preexisting conditions. The very few cases in which nonsmoking federal employees have been awarded compensation because of co-

2023468379

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

worker smoking involved situations in which the federal government had failed to follow a policy of reasonable accommodation.

The era that gave rise to such cases -- an era in which nonsmoking federal employees sometimes were required to share their immediate workspace on a sustained basis with smoking employees -- is largely behind us. Under General Services Administration regulations in effect since 1987, smoking is prohibited in most general office space in GSA-controlled buildings and facilities. Smoking areas may be designated in such office space only if strict conditions are met to accommodate nonsmoking employees. 41 C.F.R § 101-20.105-3(b)(1).[1/] In addition, smoking is prohibited in auditoriums, conference rooms, libraries and elevators. Id. § 101-20.105-3(b)(2),(3),(6). Smoking also is prohibited in corridors, lobbies, restrooms and stairways unless it is "not possible to designate a sufficient number of other smoking areas." Id. § 101-20.105-3(b)(4) & (c)(2)(iv). The GSA regulations are designed to serve the goals of minimizing exposure of nonsmokers to ETS while at the same time recognizing and accommodating the

---

[1/] Smoking areas may be designated in general office space only if the office space is "configured so as to limit the involuntary exposure of non-smokers to secondhand smoke to a minimum; e.g., the office space must be large enough and sufficiently ventilated to provide separate smoking and non-smoking sections which protect non-smokers against involuntary exposure to smoke." Id. § 101-20.105-3(c)(2)(iii). The regulations define "general office space" as "space occupied by personnel performing their daily work functions; this includes, but is not limited to, ADP areas, mail rooms, file rooms, duplication areas, court and jury rooms, office space, etc." Id. § 101-20.105-3(a)(3).

2023466380

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

needs of smokers. See id. § 101-20.105(3)(a). The policy that the GSA regulations embody is one of reasonable accommodation.

H.R. 881, by contrast, rests on the premise that no accommodation is possible. The bill presupposes that even in the most minute quantities, and even under the most sporadic or intermittent conditions of exposure, ETS is dangerous to non-smokers, so that only by banning smoking altogether can the safety of nonsmokers be ensured and liability claims against the federal government be avoided. It is this extreme notion that the recent report by EPA is cited to support. For the reasons discussed below, however, we believe that the EPA Report does not support a ban on smoking in workplaces and that a smoking ban is not required to address liability concerns.

II. The EPA Report does not expose the federal government to new liability for allowing smoking in the workplace.

A. EPA's assertion that ETS can cause lung cancer is not new, and prior suggestions of harm have not produced an avalanche of claims against employers.

The Surgeon General of the United States first suggested that ETS may be hazardous to nonsmokers more than 20 years ago, and both the Surgeon General and the National Academy of Sciences issued reports in 1986 claiming that ETS can cause lung cancer. Despite those reports (which are subject to many of the same criticisms as the EPA report), there has not been an avalanche of claims against the federal government or other employers who permit smoking.

2023468381

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

Even Robert A. Rosner of the Smoking Policy Institute, who counsels employers on how to implement workplace smoking restrictions, has stated that he is "skeptical of claims that secondhand suits will [now] take off." Noting that "the same basic data has been out there since the 1980s," Mr. Rosner has asked, "Why * * * should the EPA report make a difference?"[2/]

To assess the true legal implications of EPA's action, it is necessary to understand what the agency's classification of ETS as a Group A carcinogen means -- and does not mean.

1. **In and of itself, EPA's classification of a substance as a Group A carcinogen does not represent a determination that the substance is necessarily hazardous at levels typically encountered.**

EPA, based on its review of studies conducted by others, has concluded that ETS is capable of causing cancer in humans -- at some levels, under some conditions. In and of itself, the classification of ETS as a Group A carcinogen does not reflect any conclusion about the potency of the substance or the extent of the hazard, if any, that may be presented in particular settings.

According to Bruce Ames, a University of California scientist who developed a key test for the carcinogenic potential of substances, practically everything we eat and drink contains carcinogens, many of them naturally occurring. As a

2/ National Law J., March 1, 1993, p. 12.

2023468382

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

recent front-page article in the Wall Street Journal points out, even common beach sand has been labeled as carcinogenic.[3/]

In fact, Dr. Devra Lee Davis of the National Research Council of the National Academy of Sciences recently noted that the relative risk of cancer from chlorinated water is greater than that attributed by EPA to ETS. As Dr. Davis stated last November, at the Disinfection Byproducts Technical Workshop of the Center for Environmental Dispute Resolution in Washington, D.C., in reference to the risk of cancer from chlorinated water:

> "The relative risk [for chlorinated water] is higher than the relative risk for environmental tobacco smoke. The difference is that nobody likes environmental tobacco smoke. It's kind of easy * * * for people to say, 'Oh, let's get rid of that smoke; it's really nasty and horrible,' but in fact, the relative risk we are talking about here in [a study of chlorinated water and cancer] was higher than the relative risk, for the average, for lung cancer for someone married to a smoker. Think about that."

Similarly, Dr. Morton Lippman, chairman of the Science Advisory Board committee that reviewed the EPA report, has cautioned against overinterpreting the significance of EPA's classification of ETS. When asked by a reporter about the extent of the danger posed by ETS, Dr. Lippman responded that the questioner probably had incurred a greater risk driving through Washington traffic to ask his question than he would incur in a lifetime's exposure to ETS.[4/]

[3/] "Cancer Scare: How Sand on a Beach Came to Be Defined As Human Carcinogen," Wall St. J., March 22, 1993, at A1.

[4/] Washington Times, April 19, 1991.

2023468383

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

In this regard, it is instructive to consider other substances that EPA has classified as Group A ("known human") carcinogens:

> Benzene is emitted from any form of combustion such as barbecue grills and gas-fired stoves and heating. It also is found in many office cleaning agents and in ordinary tap water. Nickel is commonly used in kitchen utensils and tableware -- and even can be found in mother's milk. Chromium occurs naturally in the earth and is found in all tap water. Millions of pounds are released into the air from industrial processes each year. All are classified as Group A carcinogens but none is considered sufficiently hazardous to be banned in public settings.

The situation is similar in the case of substances that EPA has classified as Group B ("probable human") carcinogens:

> Benzo(a)pyrene is found in roast coffee and coffee powders, in hamburgers, in the fumes from wood fires and barbecues, and in water and practically all air. Formaldehyde is present in most wood products and can be released from office furnishings. Aflatoxins are found in most foods.

The State of California has concluded that more than 300 substances commonly found in the environment can cause cancer. But the State has not banned them on that basis.

2023468384

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

The U.S. Occupational Safety and Health Administration (OSHA), which is responsible for regulating exposure to carcinogens in the workplace, establishes maximum permissible exposure levels based on significant risk determinations. Typically, these limitations are expressed in terms not of a ban but of a permissible exposure limit over an eight-hour working period. For example, permissible occupational exposure limits have been set for arsenic, asbestos, benzene, chromium, coke oven emissions, nickel and vinyl chloride, all of which are classified by EPA as Group A carcinogens.

2. **Studies of workplace smoking, which EPA ignored in its report, overwhelmingly fail to support claims of an increased risk of lung cancer.**

In classifying ETS as a Group A carcinogen, EPA considered the results of epidemiologic studies that have accumulated in the last ten years assessing reported ETS exposure in the home. Whether the conclusions drawn by EPA from those studies, or the methods it employed to reach those conclusions, are valid -- and many say they are not[5/] -- what is significant from a legal standpoint is that EPA simply ignored available studies of workplace smoking. Of the 15 such studies that have been conducted, 13 report no statistically significant increase in overall lung cancer risk.

5/ See, e.g. "Is EPA Blowing Its Own Smoke: How Much Science Is behind Tobacco Finding?", Investor's Business Daily, Jan. 28, 1993.

2023468385

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

Both the National Academy of Sciences and Meridian Research, an independent research organization commissioned by OSHA to study the possible health effects of workplace exposure to ETS, have indicated (in 1986 and 1988 reports) that the differences in home and workplace environments make extrapolation from one to the other inappropriate. OSHA itself has emphasized that epidemiologic studies of spousal exposure in residential settings (the studies considered by EPA) are of "limited" applicability in assessing risk "under actual, prevailing occupational exposure conditions."[6/]

3. **OSHA should be allowed to complete its consideration of whether workplace exposure to ETS should be limited for health reasons.**

EPA has no regulatory authority over indoor air or ETS. So far as workplace smoking is concerned, regulatory authority resides with OSHA. OSHA may not regulate any substance in the workplace in the absence of data showing a significant risk of harm to human health based on actual occupational exposure conditions.

Prior to the release of EPA's report, OSHA consistently had rejected requests to ban or restrict workplace smoking. On January 14, 1993, after EPA released its report, the Secretary of Labor directed OSHA to commence a rulemaking

---

[6/] Brief for the Secretary of Labor, p. 13, ASH v. OSHA, No. 89-1656 (D.C. Cir. April 5, 1991).

2023468386

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

addressing workplace exposure to ETS. Noting that EPA's review had been limited to studies of exposure to ETS in the home, the Secretary of Labor directed OSHA to determine the relevance, if any, of that evidence to workplace exposure to ETS.

The failure of the workplace studies to demonstrate an overall increased lung cancer risk from ETS exposure is a significant fact that OSHA must take into account. It would be precipitous for Congress to ban smoking in federal buildings without awaiting OSHA's expert determinations in this regard.

B. The EPA Report is not legally determinative on the question of whether ETS can cause lung cancer.

The EPA report is not legally determinative in court on the issue of whether ETS can cause lung cancer. It has no more judicial significance than the reports by the Surgeon General and the National Academy of Sciences, which also have expressed the view, based on many of the same studies reviewed by EPA, that ETS is capable of causing cancer. As noted, these reports have not produced an avalanche of claims.

Moreover, even if the EPA Report were to be considered as evidence in a court of law, it seems unlikely that the report itself would ever be treated as establishing that ETS was the cause of any individual's lung cancer. Among other things, EPA's estimated "relative risk" of lung cancer in nonsmokers exposed to ETS is so low as to invite considerable judicial skepticism with regard to such a claim.

2023468387

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

"Relative risk" compares the incidence of a disease among a population exposed to a substance to the incidence of the disease among a population not exposed to the substance. Because of the difficulty of controlling for bias and confounding in epidemiologic studies, relative risk estimates below 2.0 (1.0 signifies no difference in risk) generally are regarded as weak and either uninterpretable or unimportant.

EPA's estimated relative risk of lung cancer in nonsmokers reportedly exposed to ETS in homes was only 1.19. Courts have been quite skeptical of efforts to attach importance to such low estimates. See, e.g., DeLuca v. Merrell Dow Pharmaceuticals, Inc., 911 F.2d 941 (3d Cir. 1990) (where a plaintiff relies solely on epidemiologic proof to establish that a product caused her condition, "relative risk" must exceed 2.0 if plaintiff is to avoid summary judgment).

C. Even after the EPA Report, individual claimants face nearly insurmountable problems of proving causation.

Even if EPA's report were viewed by a court as establishing that ETS can cause lung cancer in humans, that still would leave unsatisfied the other prerequisites to a successful claim. In any particular case, a nonsmoking federal employee would have to prove both that his or her lung cancer was caused by exposure to ETS (not something else) and that his or her exposure to ETS in the federal workplace (not other places) was the proximate cause of the illness. Even after the EPA Report, the plaintiff would bear the burden of proof on both points.

2023468388

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

Many factors have been associated with lung cancer in nonsmokers. Establishing that any one of them played a causative role in any particular case would be problematic at best. That would be true for factors, such as exposure to radon and diet, for which there is a reasonably strong association with lung cancer. It would be even more true for the many reported factors, including exposure to ETS, having only a weak or highly equivocal association with lung cancer.

As noted, the claimant in such a case also would have to establish that exposure to ETS at the workplace was directly responsible for his or her condition. That burden would involve many additional problems, including overcoming the fact that the vast majority of substances in ETS are ubiquitous -- that is, exist at measurable levels in most environments (workplace and non-workplace) whether or not smoking is permitted.[7/]

D. Current federal smoking regulations provide ample protection from claims under the Federal Employees' Compensation Act.

The Federal Employees' Compensation Act ("FECA"), 5 U.S.C. 8101 et seq., provides a comprehensive remedy for federal employees who suffer work-related injury sustained in the performance of their duties. "Injury" is defined to include, in addition to injury by accident, a disease "proximately caused by the employment." 5 U.S.C. 8101(5), 8102(a). As the Employment

---

7/ See generally Guerin, Jenkins & Thomkins, The Chemistry of Environmental Tobacco Smoke: Composition and Measurement (1992).

2023468389

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

Compensation Appeals Board has stated, "[an] injury that has some connection with the employment but that does not arise out of the employment is not covered."[8/] The Appeals Board has emphasized the heavy burden on a plaintiff claiming that workplace exposure to ETS or other workplace conditions has caused disease under FECA:

> "An award may not be based on surmise, conjecture, speculation, or appellant's belief of [a] causal relationship. A person who claims benefits under the Federal Employees' Liability Act has the burden of establishing the essential elements of her claim. Appellant must establish that she sustained an injury in the performance of duty and that her disability resulted from such injury. As part of this burden, a claimant must present rationalized medical opinion evidence, based on a complete factual and medical background, showing [a] causal relationship. The mere manifestation of a condition during a period of employment does not raise an inference of [a] causal relationship between the condition and the employment. Neither the fact that the condition became apparent during a period of employment nor appellant's belief that the employment caused or aggravated her condition is sufficient to establish [a] causal relationship."[9/]

[8/] In re Martinez, No. 88-937 (E.C.A.B. 1988) (emphasis added) (physician stated that none of employee's conditions was "caused exclusively" by employment-related factors including workplace exposure to ETS). A number of state courts have held that, because ETS is not an intrinsic aspect of any particular employment but is something to which people generally are exposed in myriad venues, a disease assertedly resulting from ETS exposure on the job does not "arise out of" the employment so as to make it compensable under the state workers' compensation statute. Palmer v. Del Webb's High Sierra, 838 P.2d 435, 437 (Nev. 1992); Kellogg v. Mayfield, 595 N.E.2d 465, 466 (Ohio App. 1991); ATE Fixture Fab v. Wagner, 559 So.2d 635 (Fla. App. 1990); Mack v. County of Rockland, 530 N.Y.S.2d 98, 99 (N.Y. App. 1988).

[9/] In re Welke, No. 89-866 (E.C.A.B. 1989) (emphasis added and citations omitted). This standard is expressed in regulations implementing FECA, 20 C.F.R. § 10.110 (1992) (burden of proof).

2023468390

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

On several occasions, the Compensation Appeals Board has found that, although workplace exposure to ETS was not shown to have caused an employee's medical condition, such exposure did temporarily aggravate the condition. But these were atypical cases in which the federal government had failed to follow a policy of reasonable accommodation. The employees in these cases were found to have preexisting medical conditions that were aggravated temporarily when the employees were forced to share their immediate workspace with smoking employees in poorly ventilated offices. The employees were found to be unable to work under such conditions and were awarded compensation for the period during which these working conditions rendered them disabled.[10/]

[10/] See In re Varela, No. 89-1189 (E.C.A.B. 1989) (employee had been forced to work in a poorly ventilated room amidst heavy smoking 8½ hours a day); In re Soo, No. 89-19 (E.C.A.B. 1989) (nonsmoking employee who alleged exposure to ETS, perfume and "other chemicals" in a poorly ventilated workspace); In re Valenza, No. 88-1216 (E.C.A.B. 1988) (employee had been required to work in a "very smoky" environment and was exposed to "heavy concentrations of cigarette and cigar smoke" at work); In re Hembree, No. 82-154 (E.C.A.B. 1982) (employee who previously had occupied a nonsmoking semi-private office was reassigned to a workspace shared with smoking employees); In re Meyer, No. 80-1719 (E.C.A.B. 1980) (employee had been required to share a workspace with smoking employees). See also Carroll v. Tennessee Valley Authority, 697 F. Supp. 508 (D.D.C. 1988) (employee forced to work in small, poorly ventilated office with co-workers who smoked); In re Marshbanks, No. 87-426 (E.C.A.B. 1987) (employee was exposed daily to "dust, cigarette smoke, stress and physical strain from lifting mail sacks"); Parodi v. Merit Systems Protection Board, 702 F.2d 743, 749 (9th Cir. 1982) (employee found to be medically precluded from working in a room in which "many other" employees smoked).

2023468391

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

The current federal smoking regulations, as discussed, now prohibit such working conditions. The regulations thus appear to provide ample protection from such claims in the future. The lesson of these cases is that the federal government avoids claims by nonsmoking employees by following the policy of reasonable accommodation that its own regulations now prescribe.

These same cases, however, also illustrate the formidable obstacles facing an employee claiming that exposure to ETS in the workplace caused lung cancer. In none of these cases, as noted, did the Compensation Appeals Board find that the employee had established that workplace exposure to ETS had caused the underlying condition. 5 U.S.C. 8101(5).[11/]

D. The federal government does not face potential liability under the Federal Tort Claims Act.

Maintaining the current federal smoking policy, which allows agency heads to accommodate both nonsmoking and smoking

---

[11/] In re Varela, supra note 10 (employee failed to establish that workplace exposure to ETS had caused her condition); In re Valenza, supra note 10 (employee failed to establish that his asthma was caused by workplace exposure to ETS); In re Marshbanks, supra note 10 (workplace exposure to ETS had aggravated employee's preexisting condition temporarily but condition was not caused by factors of his employment including exposure to ETS). See also In re Welke, supra note 9 (employee "has not established that her [condition] was causally related to factors in her federal employment" including exposure to ETS); In re Martinez, No. 88-937 (E.C.A.B. 1988) (employee had failed to establish that her respiratory condition and stress were caused by factors of her employment including workplace exposure to ETS); In re Spangler, No. 87-1950 (E.C.A.B. 1987) ("no medical evidence that [employee's] sensitivity [to ETS] was caused or worsened by her exposure at work").

2023468392

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

employees, does not subject the federal government to liability under the Federal Tort Claims Act (FTCA). If the injury is one for which FECA provides coverage, the remedy provided by FECA is exclusive and the claim may not be pursued under FTCA. 5 U.S.C. § 8116(c). See Carroll v. Tennessee Valley Authority, 697 F. Supp. 508, 511 (D.D.C. 1988) (employee claiming that her lung disease was caused by exposure to ETS in the workplace was barred from asserting her claim under FTCA); Richardson v. United States, 336 F.2d 265, 266 n.1 (9th Cir. 1964) (FECA is the exclusive remedy for employee claiming injury from exposure to toxic chemicals due to employer's allegedly negligent failure to maintain a safe workplace).

Even if the FECA did not bar an employee from pursuing a claim under the FTCA, we believe that the federal government would not be subject to suit for permitting smoking in federal buildings. The FTCA bars:

> "Any claim based upon an act or omission of an employee of the Government, exercising due care, in the execution of a statute or regulation, * * * , or based upon the exercise or performance or the failure to exercise or perform a discretionary function or duty." 28 U.S.C. 2680(a).

Whether viewed as involving "the execution of a * * * regulation" issued by the GSA, or as involving the exercise of discretion in the furtherance of government policy, in our view an agency head's designation of smoking areas in federal buildings pursuant to the GSA rules or like authority could not serve as a basis of liability under the FTCA. See generally United

2023468393

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

States v. Gaubert, 111 S. Ct. 1267, 1274-75 (1991) (discussing the elements of the discretionary-function exception).

E. The Americans with Disabilities Act and the Rehabilitation Act of 1973 do not require the federal government or other employers to ban smoking.

The Americans with Disabilities Act ("ADA") prohibits employment discrimination by the Legislative Branch. See 42 U.S.C. 12112(a); 12209.[12/] The Rehabilitation Act of 1973 prohibits such discrimination by Executive Branch agencies. See 29 U.S.C. 791(b). These statutes require the federal government, in matters of employment, to make "reasonable accommodations" to known disabilities of employees unless the accommodation would impose an "undue hardship" on the employer.

In promulgating rules implementing the ADA, the Equal Employment Opportunity Commission made clear that sensitivity to environmental agents such as ETS does not automatically constitute a "disability" under the ADA. 56 Fed. Reg. 35544, 35549 (July 26, 1991) (rules for public accommodations).[13/] Moreover, even if an individual were to establish that sensitivity to ETS were a disability within the meaning of the statutory term, an

---

[12/] Although it is covered by the ADA, the Legislative Branch is governed by different enforcement procedures established by Congress for its employees. 42 U.S.C. 12209; EEOC's Technical Assistance Manual, Vol. 1 (Jan. 26, 1992), reprinted in Americans with Disabilities Act Manual (BNA) 90:0504.

[13/] Cf. Byrne v. Board of Education, 979 F.2d 560, 565 (7th Cir. 1992) (plaintiff claiming respiratory disability failed to show that her sensitivity to aspergillus fumigatus, a common fungus found in many environments, rendered her disabled under the Rehabilitation Act).

2023468394

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

official of the EEOC has emphasized that "the ADA does not require employers to have a smoke-free environment or prevent it. It does not interfere one way or the other."[14/]

Indeed, a federal court of appeals has held specifically that providing an individual with a "totally smoke-free environment" goes beyond the government's obligation to provide "reasonable accommodation" within the meaning of the Rehabilitation Act. Pletten v. Merit Systems Protection Board, Nos. 88-1467, 89-1086 (6th Cir. 1990) (unpublished disposition), cert. denied, 111 S. Ct. 768 (1991). See Vickers v. Veterans Administration, 549 F. Supp. 85 (W.D. Wash. 1982) (assigning hypersensitive nonsmoking employee to work in room without smoking employees was a "reasonable accommodation" under the Rehabilitation Act).

Assuming that an individual's hypersensitivity to ETS were to be viewed as a "disability" under the ADA or the Rehabilitation Act in a particular case, it seems likely that the provision of smoking and nonsmoking areas in federal buildings as prescribed by the current federal smoking regulations would be viewed as a "reasonable accommodation" within the meaning of those statutes.

2023468395

[14/] National Law J., March 1, 1993, p. 12.

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

F. Banning smoking would do little to address the risk of claims based on poor indoor air quality.

Tobacco smoke frequently is claimed to contribute to poor indoor air quality because it typically is the most visible component of the indoor environment. Because it is visible, tobacco smoke is the proverbial "canary in the coal mine." If employees or other building occupants are complaining about tobacco smoke, a broader problem involving inadequate ventilation may well be present. Banning smoking will not solve that problem and will not eliminate potential liability for it, especially if employees are led to believe that the employer has "solved" indoor air quality problems by banning smoking.

CONCLUSION

Legislation banning smoking in federal workplaces would be premature while OSHA is studying the matter. The federal government should accommodate its smoking employees while at the same time respecting the sensitivities of its nonsmoking employees. Reasonable accommodation is the key to avoiding claims by nonsmoking employees. H.R. 881 goes further than necessary to accommodate nonsmoking federal employees. It should be rejected.

2023468396

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000

2023468397

Source: https://www.industrydocuments.ucsf.edu/docs/nxlm0000